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THE

FLORICULTURAL CABINET,

AND

Florists' Magazine.

JANUARY TO DECEMBER, 1856.

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PREFACE.

In presenting the present volume of the Floricultural Cabinet to the Public, the Editor does it with a strong feeling of confidence, which is inspired by its increasing circulation. To this unequivocal testimony in its favour he refers with a sense of grateful pride, as well as perfect consciousness that for success he is chiefly indebted to the number, variety, and practical usefulness of those communications with which he has been enabled to enrich its pages.

It is this, the Editor feels, that constitutes his stronghold upon public patronage, and upon which he rests with unabated confidence; he also feels assured that his own anxious endeavours to diffuse Floricultural knowledge will be zealously seconded by those who can so materially aid him by contributing the results of their experience, and offering farther suggestions for the improvement of the work, an object which has at all times been acted upon, by adopting such suggestions as are compatible with the low price of the work.

In the twenty-four volumes of the work which have been already issued from the press, the Editor does not hesitate to affirm (backed by the opinion of great numbers of the floral public) that they contain more useful information on the department of which they treat than any other work extant which is farther illustrated by the fact that, although since the establishment of the FLORICULTURAL CABINET many works of a similar nature have been put forth and have successively passed away, the present continues to receive the largest share of public patronage.

With renewed pledges for the future, the Editor begs to return his sincere thanks to his numerous readers and correspondents, trusting to a continuance of their support, which it is his anxious desire to merit.

LONDON, *December*, 1856.

1 Phil^p. Miller

2 Batty Langley

3 Your most obedient
& most humble servant
Dan. Solander

4 Ellis

5 Tho. Pennant

6 P Collinson

7 Carolus Linnæus.

8 W. Curtis

9 very Sincerely Yours
Hans Sloane

10 Jos. Sabine

12 Latreille.

11 Evelyn

13 Ffrancis Willughby

14 J. C. Loudon

15 Tournefort

16 Your Obliged
& Faithfull servant
Jos: Banks.

17 Thomas Bewick

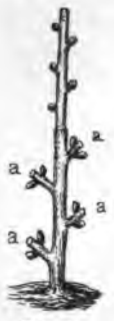
18 G. Cuvier

19 Le C.te de Buffon

20 A. G. Werner

21 M. l'abbé de saint pierre

AUTOGRAPHS.



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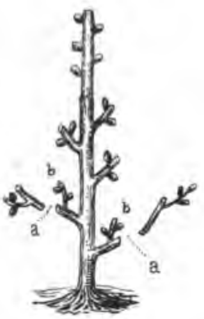

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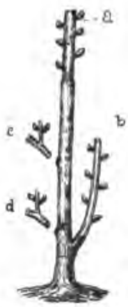

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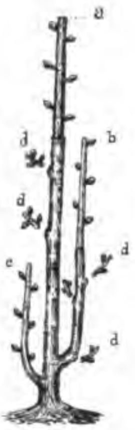

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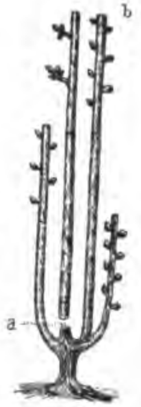

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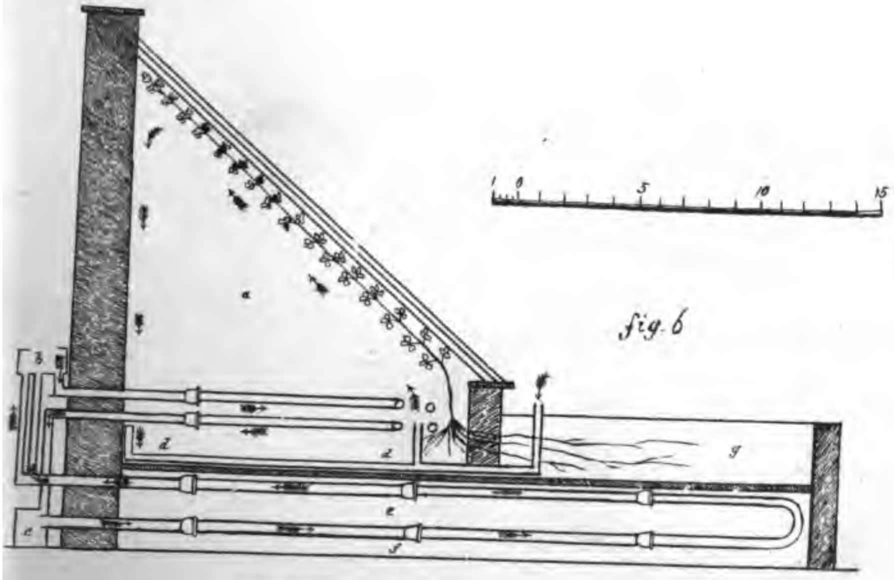

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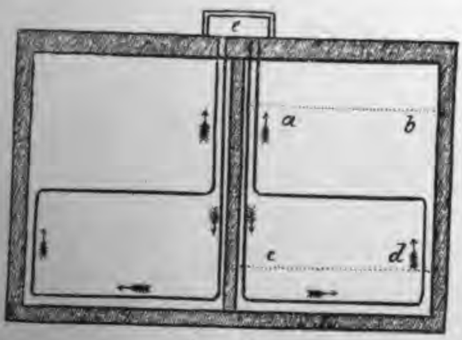

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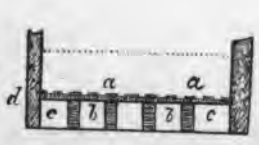

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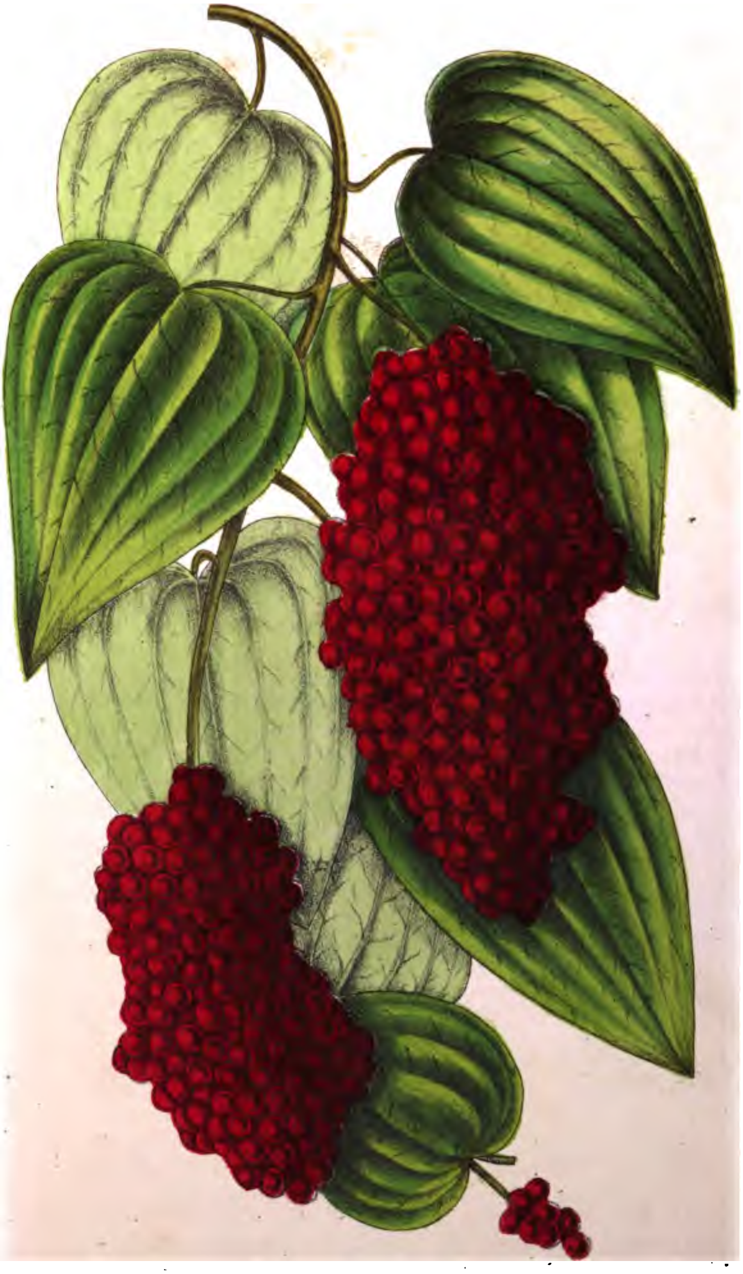


SMILAX MAURITANICA.

The Floricultural Cabinet.

JANUARY, 1856.

ILLUSTRATION.

SMILAX MAURITANICA.

The name of this genus is derived from *smile*, a scraper—the stems of the earlier discovered species being rough with numerous short prickles. It is affirmed that the genus comprises one hundred and fifty kinds, some of which have been discovered in almost every temperate climate of the globe. They are climbing plants, of a similar habit to the Ivy; whilst some of the stems climb, others creep along the ground; in their *native localities* they climb up the trunks of trees, in *shady woods*, to a considerable height. Of those introduced into our own country and proved hardy, they are admirably adapted to cover the naked trunks of trees that are contiguous to the dwelling-house, or other much-frequented structure, walls, etc. The *greenhouse kinds* are well adapted for covering the inside of the back, or end walls, even if shaded by other plants or stage, training up pillars or over trellis-work.

The *Smilax* belongs to the twenty-second class of the Linnæan system of botany, viz. *Diœcia*, which comprises plants that bear female flowers on one individual, and males on another. The flowers are small, uninteresting, of a greenish-white tinged with yellow. It is evident that the plant from which our figure was taken is a female, of great beauty, bearing a profusion of its richly coloured bunches of berries. It is very interesting and ornamental, deserving a place in every greenhouse. It grows freely in equal portions of loam, peat, and leaf-mould, freely drained. Plants may be procured at a low price. M. Van Houtte possesses some of them. The roots of the *Smilax Sarsaparilla* being cut into thin pieces is the far-famed medicinal *Sarsaparilla*, so well known as a restorative of health.

REMARKS ON TREE CARNATIONS.

BY MR. WILLIAM SMITH, ST. JOHN'S WOOD, LONDON.

In the establishment with which I am connected there is a most admirable collection of all the best, numbering one hundred and twenty-four varieties. Many of them have been in bloom all the past summer, and the same plants are likely to do so freely through the coming winter; in fact, as their title imports, they are *perpetual blooming*. They are comparatively of recent introduction; but scarcely any other plants have proved so really useful, especially during winter, as these beautiful flowers, whether for cut flowers, or displaying their beauties on the plants. They flourish, too, at that season, either in the dwelling-room, pit-frame, greenhouse, or stove.

Their cultivation, too, is of the easiest character. They are readily increased by cuttings, taking those shoots which are about *half ripened*, cutting them *close under* a joint, and dressing off a few of the lowest leaves. The best time to do it for a *winter stock* of blooming plants is in *spring*, from the middle of March to the middle of May; they then have a summer's growth and become strong.

The cutting pots should be well drained with crocks, next a portion of moss upon them, then some rough shiftings, and be filled up with a mixture of equal parts of fresh loam, leaf-mould, and silver sand; and after watering this compost, the cuttings may be inserted, being careful that it is *closely pressed* around each cutting; but in doing this, do not *bruise* the part which is in the soil. If the pots be placed in a *gentle* hotbed frame, or other close structure, where there is a little bottom heat, they will soon strike root; shading from the sun is necessary. It sometimes occurs that a few of the leaves decay, if so, take them off immediately, or they will create damp.

When the cuttings are rooted, pot them into four-inch pots, in a compost of equal parts of loam, peat, old dried cow-dung, and silver sand, with a sprinkling of bits of charcoal, brick, or porous stones, and still have them where there is a gentle, warm, *moist* atmosphere. As soon as they begin to grow, give an increase of air, to prevent them *drawing* up weakly; after pushing a few inches, stop the leads, to cause the production of *side shoots*, so that the plants may be *bushy*. Gradually harden them off, and when well established, place them in a shallow cold pit or frame. The plants delight in frequent syringing, *under* and *over* the foliage. If attacked with green fly, dip the plant in strong tobacco-water. As soon as the pots are well filled with roots, repot into seven-inch pots, and again into larger, as required. If the foliage be attacked by *mildew* (seen by black spots appearing), sprinkle over and under with dry sulphur. Just before the cold damp weather of autumn occurs, let the plants be removed to the greenhouse, conservatory, dry pit, or other frame, where they will soon begin to bloom, and a succession be furnished through winter and spring. When they have done blooming, take off any suitable cuttings, and cut the plants back, quite low indeed, to cause a fresh supply of shoots, either for cuttings only or, if desirable, to form a larger bush, to bloom the following season. An application of *manure-water*, with a sprinkling of *soot* in it, should be given to the roots once a week, during the period from the buds first appearing to the time the bloom is in perfection. This liquid enriches the soil, and the plants become more vigorous, the foliage of a deeper green, and in proportion is the quantity and size of flowers, and the richness of their colours. The stopping of shoots on established plants must be regulated by the period it is desirable they are required to bloom: as, for instance, to bloom in winter, do not stop later than the middle of July; but to come into bloom early in spring, stop them about the first week in September. By introducing plants in succession through winter, placing them in a gentle warmth, they may be had in bloom at any desired time.

Any surplus stock plants may be planted out-doors, trained to a good-aspected sheltered wall, and grown in a *well-drained* border of rich strongish soil, and they will, if put out early in May, bloom from the beginning of June to the end of summer. I have usually thus put out the previous year's plants that had been cut down after blooming.

The following eighteen varieties are very excellent. *Adonis*, bright scarlet, with white stripes, dwarf habit; *Ariosta*, rich crimson, self, superb variety; *Don Pedro*, purple, mottled with white, free bloomer, dwarf, showy; *Duchesse de Berri*, yellow edged with rose, very superb; *Emilia Campioni*, yellow, edged with scarlet, superb; *Le Grenadier*, very brilliant scarlet, of great beauty; *Isabella*, purple spotted, and mottled with white, free blooming; *Cornelia*, fine violet purple, rich clove-scented; *La Concorde*, salmon and scarlet, fine form, and very sweet; *Madonna*, blush, striped and spotted with crimson; *Victorine*, orange-yellow Picotee, with scarlet edging, very handsome; *Picturata*, very large, in flakes of scarlet, white and crimson; *Princesse Hortense*, rich crimson, clove-scented, superb; *Targionia*, rich deep violet and purple, very sweet; *Temple of Apollo*, scarlet and crimson flake, clove-scented, superb; *Reine des Blanches*, very large, handsome white flower; *Henrietta Chauviere*, white Picotee, edged with purple; *Flora Mc Ivor*, white Picotee, edged with rose, beautiful.

A SUCCESSFUL METHOD OF CULTIVATING THE INDIAN AZALEA.

BY MR. JOHN WRIGHT, OF TARLETON GARDENS, SALOP.

By the following mode of treatment I have grown and bloomed this beautiful family of plants far superior to any I have seen elsewhere, not excluding even those shown at the London exhibitions. Turfy-sandy peat soil, not sifted but chopped, which has been laid in a ridge for six months, and about a quarter of rich loam, also kept rough, is a compost they delight in, using a free drainage. Care must be taken not to over-pot them, and to let the ball be highest at the centre, and be raised so that the water does not lodge about the *collar* of the plant, or the plant will be very liable to canker off. They should be repotted *just before they begin to push* in spring; when growing, be frequently syringed over head, and kept in a temperature from 50 to 60 degrees. Have a liberal allowance of air and light, taking care they are not placed in a *cold current*, as it often destroys plants so situated, especially in the early spring months. When done blooming, about the end of July, place them in the open air, where they will be sheltered, not under the drip of trees, but where they will have the full afternoon sun. Here they will require to be frequently syringed. At the end of September, having formed their blooming buds, they should be taken into the greenhouse, and be placed at the back part, near to the glass. Some attention is required in forming a plant so as to have a nice leading stem, and to be clothed from the edge of the pot to the summit with a regular arrangement of blooming shoots. Occasional pinching off the points of the leaders or laterals will be necessary to effect the purpose, but with such attention any desired form is readily obtained. When required to bloom in winter or early in spring, it takes about five or six weeks from beginning to push till they are in bloom, and by regular introduction a constant succession from Christmas to July may be had.

VALUE OF THE LILAC.

BY AN OLD AND ARDENT ADMIRER.

This old and favourite ornamental deciduous shrub, like the Rose, obtains a place wherever trees and flowers will grow. It is especially popular with the poor, who have only a small patch of ground, and cannot afford time to give much attention to what they grow for their pleasure. Like the name of a great man, it finds its way into every nook and corner, and is certainly the first to be selected by every humble cottager who has taste enough and time enough to cultivate a few flowers. The Lilac is one of the hardiest plants grown in England. It will withstand our severest winters; and nothing but a continuous cold north or east wind has the least effect upon it. But even in such a wind, and during a severe frost, it is but little injured, save when exposed to an incessant current; then, of course, like everything else, the Lilac will give way. You may cut it down, but it won't be cut up. The branches may be killed to the ground, but others will rise on the return of fine weather. Then, again, the Lilac is one of the very first to bud and blossom in the spring; and it is green long before others of its compeers are well out of their winter's sleep. Like the Buttercups in the meadow, its very appearance speaks of summer; and associated with the bright yellow Laburnum, its flowers produce a charming effect by the waysides; whether they are the *true lilac* colour, rose-white, or what is termed the *new-red* flowered, and borne in such profusion as to bow down their graceful plumes in order that the admirer may inhale more easily the richly perfumed fragrance of their beautiful flowers. With all its recommendations, however, its hardy constitution, its graceful habit, and its beautiful flowers, the Lilac, it must be confessed, has its faults, or rather fault, for it has but one—its tendency to push up shoots at the root, which, under certain circumstances, make it a mere net for all sorts of passing litter or rubbish. At the fall of the leaf, all the other trees and bushes seem as if they would make quite a "butt" of our good-natured acquaintance, and keep on "shying" their cast-off clothes into its lap—at least so long as the game lasts. Indeed, I have sometimes fancied that its name must have some connection with the idea of a "save-all," a net or trap; for it would take me some time to describe all the miscellaneous and heterogeneous articles of which it is often made the depository during winter. But I do not think such an account would be interesting enough, especially as many of the items which I find now and then have no possible resemblance to the foundlings of the Excise-office. I must protest, however, against planting my old favourite beside the railing of squares and other enclosures, where it is so likely to be made the receptacle of old shoes, broken bottles, and the lighter articles which are "wafted by the early breeze," in the form of tailors' refuse, straw, and leaves. Why should the Lilac be selected to form the laughing-stock of every passer-by? In order that I may have the *Lilac bushes* ornamented with flowers, when their own blooming is over, I have planted the *Evergreen Honeysuckles* near to them, and have the branches entwined amongst those of the Lilac, and they bloom over the surface till November. I have also had them adorned with *Convolvulus major*, which succeeds well.

OBSERVATIONS ON CORRÆAS AS WINTER AND EARLY SPRING ORNAMENTS.

BY MR. FREDERICK WELLS, ASHRIDGE HOUSE, MIDDLESEX.

THE beautiful *Corræa speciosa* I first saw in the fine collection of plants in the garden of Count de Vandes, at Bayswater, thirty years ago. I soon obtained one and have grown it ever since, considering it one of the most neat and beautiful *winter and early spring* flowering plants we possess. The species subsequently introduced, and all the hybrid varieties that have been raised, and offered for sale at the nurseries since that period, I have obtained as soon as I could. I now possess thirty-five different kinds, and have had them for some years in fine bloom in my greenhouse or sitting-room window, from the beginning of November till May. Their beautiful tubular-formed flowers of varied colours producing a pleasing contrast, render the entire family one of much interest. Several years back I commenced hybridizing, with a view to obtain other distinctive varieties between the best species I had, as *C. speciosa pulchella*, and others, and have raised a considerable number of varieties, not two of them alike, varying either in colour, form, habit, or size. I was much astonished with the result, that from the same parent there was such a dissimilarity after the process of an artificial impregnation. It is, however, well known that artificial or natural peculiarities can be and are transmitted from parent to offspring, in the vegetable as well as in the animal kingdom, although we cannot yet and perhaps may never be able to account why such constitutional peculiarities are so transferred. Let us, then, be content with knowing that these peculiarities do exist; let us, likewise, multiply and register as many facts as bear directly or indirectly on the subject; and from an accumulated store of this nature something tangible may yet be deduced for future guidance. To know when the stigma is ready for dusting with pollen, to extract unripe anthers from an intended female parent, is so simple that it might be taught to a child in a few minutes; not so the means by which certain properties may be produced, and ultimately will probably be produced at pleasure, by cross fertilization; say, cross offspring with very dwarf and fruitful habits, or the reverse; very luxuriant habit with double flowers, or the contrary; and many other peculiarities, needless to mention here. Yet we have presumptive evidence already that all these states of existence are guided by certain fixed laws, and perhaps depend on the different states of development of the vital principle in the parents. Any facts therefore tending to elucidate such laws or states of development cannot but be interesting to the physiologist, and of the greatest use to the hybridist. In the attention I have paid to this interesting pursuit, I have found that *C. speciosa* or *C. pulchella* may be both used for female parents; either of them may be tried with *virens;* but clear clean colours in the flowers of this cross cannot be expected, the thing being as much a matter of curiosity to ascertain the powers of crossing in this very interesting genus, which, like the Fuchsia, is a favourite with every one. *Virens* and *rufa* will cross; but, in this case, *virens* alone has been used as the female parent, *rufa* being so insignificant a flower that it would be likely soon to reduce the flowers of *virens* in the offspring. From this cross, by breeding in and in, as the farmers say, a clear white flowering offspring may reasonably be expected in the third generation; while, by crossing in and in the highest-coloured varieties from *speciosa* and *pulchella*, I have obtained some deep crimson flowers. I have crossed a pure white seedling from *virens* and *rufa* with a deep crimson variety, and procured clear intermediate colours. All the species and varieties I have tried with *alba*, and have raised some, but they have not yet bloomed.

The manner of conducting these experiments may be useful to amateurs and young beginners. Take the healthiest plants you can procure; and unless you have very healthy vigorous plants, go directly to the nursery and procure a few of each sort, with plenty of blossom buds on the strongest leading shoots; this is the grand secret of the whole business. A practical gardener may take these from the greenhouse, or even cold frame, into 75 degrees of heat at once; but those not conversant with the treatment of plants would soon kill any plant by such a sudden transition. From the middle of February to the end of March is the best time to take the plants into the stove. Pinch off all the leading buds on the lateral shoots, but not on the leading shoots. As soon as the flower expands, extract the anthers from the intended female parent; and next day, or as soon as you perceive the pistils getting moist, apply the pollen, at the same time making two or three slits in the whole length of the corolla, to let out the sweet secretion often lodging on the germen. See that the decaying corolla does not damp off the style, which ought to be preserved till it dries off itself. As soon as you perceive the germen swelling, stop the leading shoots. Apply all safe stimulants till the seeds are ripe, but do not let the plant expend its energies in the production of young wood. Pinch off every bud as it offers to expand. Keep the plant or plants as near the glass as possible all the time, and sow the seeds as soon as ripe. Seedlings produced in the greenhouse will not be near so vigorous as those in the stove, and their being originated in heat does not alter their hardiness in the least.

CULTIVATION OF THE RANUNCULUS.

BY AN AMATEUR.

Finding that the Ranunculus, comparatively speaking, has little or nothing said or written to encourage its growth, or sing its justly deserved praise, I trust that a few lines in your Magazine wlll prove useful to somebody.

Which of all Flora's gems can compare with it? True, some prefer the *flour* of oats, and some of barley, but most of finest wheat, to all creation's *flowers;* whilst others quite as lustily cry with Dr. Johnson, of all the *garden flowers*, the *cauliflower* for me. Now, if I might choose in wide creation's round, with leave to take but one, the flower that gives a smile to the cotter's fireside, when the cares and toils of day are over, would be mine.

But to return again to Flora's garland. How just the remark, what so graceful as the Fuchsia, or so gay as the Geranium? nay, what so chaste as the Auricula, or what so lovely as the Rose? and most of all magnificent, the Dahlia? Qualities and names have been assigned to others, as sweetness and humility to the Violet; whilst the title of Queen of the Garden has been justly given to the Tulip. But what, shall we ask, has been reserved for the subject of this paper, that cannot with equal propriety be assigned to any other?—most certainly symmetry. The Ranunculus, for symmetry, truly surpasses every other flower, and, doubtless, gives us the true idea of form in every double flower.

Now if, after I and many of my neighbours had given up growing the Ranunculus for some years, in consequence of repeated failures, I give a description of a small plot and the treatment of them, and some of your readers should be induced to give them a second trial, and succeed, as I have done, I am sure they will be highly gratified.

Before doing this, I may here say that the Ranunculus, Anemone, and Iris were grown by me, with considerable success, more than thirty years ago. Those being the favourites of my youth, great care I took of them, and often were they admired, and I dare say justly so, but never had I anything like, nor ever have I seen anything like the batch I wish to describe to you, giving you the treatment, which I consider the entire cause of their uncommon vigour and beauty.

Last autumn, writing to my friend Mr. Lightbody on business matters, he offered me some of his fine Ranunculuses. I said to him that myself, with many other persons, had given them up entirely, it being so difficult to get a fine bloom. In his reply, he said that he would make it a very easy thing, if I would attend to the following directions, which were very simple and very kindly given. Those directions being quite free from any perplexing nostrums, I at once agreed that he should send me a few of the very best he had. Those I soon received, forty in number, according to his catalogue price, amounted to nearly eight pounds.

But what were the accompanying directions? As near as I can recollect, they were these:—"The Ranunculu smust have something to live upon. In the autumn, I throw out a trench, from one foot to eighteen inches, according to the depth of the soil, putting at the bottom some well-rotted cow-dung or old hotbed manure, filling it up again with the same soil. In the month of February, rake it very fine, plant exactly an inch and a half deep, destroy all weeds and vermin, press the soil firmly about the necks of the plants, and I have no doubt you will have what will gratify you. One of the most important things to be attended to is not to let the roots remain in the ground after the foliage has changed colour. If you want any other information, I shall be most happy to give it you." Being then in possession of those valuables, I thought I must once more try my skill: I therefore made choice of a bed two yards from a south wall, throwing out the soil as directed, and collecting a few baskets of well-seasoned dung from a cow pasture, I put it at the bottom, sixteen or eighteen inches below the surface, covering it up with the soil thrown out. In the month of February I made the surface fine and even, by raking the soil; I then drew off the soil to the depth of an inch and a half or two inches, marking the place where each root should be planted by putting down a small pinch of silver sand, in which I inserted each root; and now, in order to carry out the directions given me, and that I might not cover them over much, or too little, I stuck in a few pegs, leaving just two inches out of the ground, so that I might cover them very exactly, and when the soil had settled they would be just an inch and a half deep.

Thinking that Ranunculuses often suffered from droughty weather, I tried to obviate this by setting up a thin screen of branches, six or eight feet high, on the south side of the bed, partially to break the rays of the sun, but not altogether to exclude them. This done, they lay still for some weeks, when all came up, except No. 1, which, like the bubbles on the river after which it is named, had glided for ever out of being. The weather now being dry, I occasionally sprinkled them over with water; and being fairly up, in order to compress the soil around the necks of the plants, I carefully walked through and through. Under this treatment they grew most luxuriantly, raising my expectations every time I inspected them, especially as all who saw them declared they never beheld such plants. At length they nearly all came into bloom; but now comes my task of giving a correct description of their beauty and growth.

Mr. and *Mrs. Archibald Johnson* were amongst the giants of the bed, most beautifully formed and sweetly marked; *Archibald* looking over the head of his fair lady full four inches, she having raised her lovely face no less than seventeen inches high. Those are gems of the first water. Near by were the lovely *Jeanie Deans* and *Nydia*, with delicate red edging, on pale yellow ground, rising to the height of seventeen or eighteen inches. *Roxalana*, quite as stately, very large and showy, but not quite so chaste as those above. *Petrel*, seventeen inches high—certainly more like an eagle, with gold-tipped wings, rising to meet the sun, than a bird of storm—was brilliant yellow, tipped with red, of the finest form. *Pelican*, rising to the same height, exquisite in form, with a clear rose edge, on white ground. *Phroine*, *William Bradshaw*, *Aboukir*, *Zebina*, *Cyra*, *Prince of Wales*, and *Commodore Napier*, with *Thomas Hood* and *Little Nell*, all attained to fifteen inches, and formed an assemblage of beauty rarely equalled. *Liffey*, *Sultana*, *Delphos*, *Ashwelthorpe*, *Baritola*, and *Hon. Robert Wilson* fell an inch lower than the above group, still they were equally beautiful. *Philomel*, *Charybdis*, and *Claudiana*, beautiful, especially the last, were thirteen inches. *Emily*, *Dr. Horner*, and the lovely *Anne Hathaway* were one foot. And now, to end this long, and, I am afraid, tedious description, I shall just notice the lowest, rising only to eight inches here—*Mackenzie*, the author of "The Man of Feeling," seeming to stoop to those chaste, lofty, and beautiful personages around him, to adore and admire. I may just add, that although the flowers were not very much larger than usual, there were those amongst them of the finest form and colour, from two to three inches over, while some had stems a quarter of an inch or more thick.

Now, if by this account of my little plot of Ranunculuses, and the simple directions here given, I induce some one to adopt the plan and succeed as well as I have done, I shall consider my time not entirely lost. Here it may be well to state, for the convenience of those who may wish to obtain a collection of roots to begin with, that Mr. Carey Tyso, of Wallingford, and Mr. Lightbody, of Falkirk, from whom priced catalogues may be had, are amongst the ***best growers*** in the kingdom.

ON THE CULTURE OF ACHIMENES.

BY MR. CHARLES SHARPE, WESTOVER LODGE, HEREFORD.

Few plants are more beautiful than these, or will better repay careful attention and management. In order to obtain fine bushy specimens, the following treatment has been found useful. A box, or cutting-pan, is prepared, by filling three parts of it with a compost of equal parts of loam and leaf-mould, on which the roots are laid, and covered two inches in depth with the same compost. These startings are in January, for May and June blooming; in March, for July, August, and September blooming; and in the latter end of ***May***, ***A. coccinea***, ***A. rosea***, ***A. elegans***, and ***A. pedunculata*** for ***December and January***. Until the shoots have appeared above the surface they must be kept moderately dry. When the plants are about two inches high, raise them from the box or pan in which they were started, and put them in their flowering pans, leaving a space of two inches between each plant, and using the same compost as recommended above, enriched by the addition of one-fourth part of old mushroom-bed dung, which will help to meet the great demand on the soil while the plants are in bloom, and by increasing the porosity of the soil, will prevent water from stagnating in the pans in the early stages of their growth. Too much care cannot be exercised in watering when the plants are in their infancy; if the morning's sunshine catch a leaf in a moist state, either from vapour or careless use of the watering-pot, in a few minutes it will become brown and crumple up, and be materially injured, if not destroyed. I have frequently had to carry the plants from the front to some shady place in the back of the pine-pits, when the atmosphere of the pit was loaded with moisture. Later in the season there is little danger of their suffering. A gentle syringing in the afternoon, with copious waterings of liquid manure at least twice a week, when they show bloom, will add to their vigour, enrich the colour of the blooms, and prolong the flowering season. When the plants have taken to their new quarters, pinch the centre out of each leader; they will then break out with a fine array of moderately strong laterals. One pinching I find sufficient for *A. coccinea* and species of a similar habit; twice for ***A. grandiflora***, *longiflora*, and those of a like semi-bushy habit, whilst the straggling nature of ***A. pedunculata*** requires three or four pinchings to form a dwarf bushy plant. Let staking be proceeded with early; for if the shoots once get out of order, half their number will be disjointed in raising them to their proper position. The stakes should be left at least nine inches above the plant, to tack the stems to, in their upward flowering progress.

ON THE CULTURE OF THE ANEMONE.

BY A COUNTRY FLORIST IN NORTHAMPTONSHIRE.

The cultivation of this desirable flower approaches closely to that of the Ranunculus. If grown as an ordinary garden flower, seedlings will be found the most desirable, as they will ultimately prove the least troublesome, and most certain to produce an abundance of bloom—the only drawback being a deficiency of double flowers, which, in my opinion, is more than made up by the greater certainty, and immense supply of bloom. The *named double* varieties require more attention. The soil should be prepared with some degree of care, both as regards the quality and proper preparation before planting. A fresh, rich, loamy soil, inclined to a sandy quality, is the best suited for the purpose. The bed should be dug full eighteen inches deep, being frequently turned, that it may be thoroughly sweet and fit to receive the roots. This is a most important point, and should be particularly attended to; for if the soil is foul, a failure will surely be the consequence. It is far better to defer planting for a week, or even a fortnight, than risk planting in impure soil. When the latter is in proper condition for use, it should be levelled, and about five or six inches being thrown off the top, add a layer of decomposed cow-manure, of about four inches, and stir the latter in with the sweetened soil four or five inches in depth. This done, cover it with the soil thrown off, and leave it to settle for a day or two, when it may be raked. Draw off the large stones and coarser parts of the soil, and reduce the bed to an even surface ready for planting; first marking it out in rows, about five or six inches distance each way. Proceed by planting the roots two inches deep, taking care that the eyes are placed upwards, which, by a little careful examination, will easily be discovered, for there are generally a few of the small fibres left on the under side of the roots, which will prove a guide to the inexperienced. When the roots are all planted, carefully draw the earth over them with the back of a rake, and be sure they are all safely covered. The time of planting for an early bloom is about the middle of September. These will flower at the beginning of April, and will continue in flower for three weeks and upwards. If the season be favourable for a second course of bloom, a plantation should be made near the middle of October, or towards the latter end. These will succeed the former; and if some roots be kept in reserve, and be planted in January or February, taking the opportunity of fine weather in either month, as it may happen, they will succeed the second plantation, and thus afford a continuance of flowers for nearly two months.

ON THE TERM "NATURAL," AS APPLIED TO IMPROVEMENTS IN LANDSCAPE.

BY A NORTH-COUNTRY LANDSCAPE GARDENER.

As one of the essential qualities of beauty in landscape, the *naturalness* of its appearance deserves particular attention. One is often questioned respecting the meaning of the word *natural* as applied to rural improvements, and I therefore attempt to give a satisfactory answer. Why, of two places, on which equal amounts of labour and art have been bestowed, one should have a natural and the other an artificial look, we cannot always readily explain. If one is stiff and formal, the other easy and graceful, and they differ in no other respects, we should say that it is the formality of the one and the gracefulness of the other that cause the difference in their expression. But there are scenes laid out without any stiffness or formality, which are far from having a natural look, making it manifest that if formality be one of the evidences of art, the opposite of this quality may not always conceal it.

We should say of the gravelled walks of a highly decorated parterre, how great soever the irregularity of their curvilinear directions, that they do not look natural; but we say the contrary of a field-path, that winds around the sides of hills, along the edges of ponds and meres, pursuing an irregular course through the vines and shrubbery of the pastures. They are both the work of art: but the one exhibits evidences of design, while the other is plainly the chance work of men and animals, who have trodden down the herbage while travelling the most convenient course to a certain point. It might be said that the irregularity, or graceful serpentine course of the field-path, and the geometrical configurations of the gravelled walks in the parterre, cause the difference in their expression. Yet a parterre may be laid out in the most irregular manner, and the field-path may be nearly straight, when passing over a level ground, still the case is not changed. The evidence of some special design would always be apparent in the gravelled walks of the flower garden and absent in the field-path.

A loose stone wall is as strictly an artificial object as a board fence. Nature, in both cases, provided the materials; and if the former has the appearance of being more natural than the latter, the explanation is that the materials of the stone wall are not of an artificial shape, but simply piled up into an artificial collection, while those of the board fence are entirely artificial in their shape. The board fence therefore exhibits to the sight more palpable evidences of art, and, design than the stone wall. Hence the latter, compared with the former, is less calculated to mar the naturalness of the prospect. But if an object exhibit evidences of design, while it harmonizes with the general appearance of nature, it seems more natural than it would if it were wanting in such harmony. A naked board fence would, on this account, seem more natural than one that is painted, especially if the paint be white, or of any glowing colour. A coat of white paint carries it one remove further from nature, and presents to the eye an additional palpable evidence of design. On this principle we may account for the greater picturesque effect of rustic fences, or such as are made of the rude materials of the forest, which, though put together with neatness and skill, exhibit no evidence of complicated art or extravagant cost. Such a fence never can be made to harmonize with a costly villa, or with any buildings which are highly finished and ostentatious in their external appearance. As well might one of our fashionable ladies hope to pass for a shepherdess, by taking a crook in her hands and adding to her costly gear a few green oak leaves.

As the evidences of art and design are calculated to injure the natural appearance of a landscape, the same effects are produced by the evidences of cost. A landscape beautifully decorated, in harmony with the general aspect of nature, may have been laid out at a very great expense, yet if the taste and ingenuity of the artist have concealed the palpable evidences of cost, the whole scene appears to the beholder to be one of those lovely places on which Nature has lavished an extraordinary portion of her favours. This art I conceive to be the true secret of successful landscape gardening,—as the perfection of eloquence consists in the attainment of the highest graces of composition, combined with a charming simplicity, that makes the whole seem to be the extemporaneous outpouring of the mind. The designer of landscapes has attained the perfection of his science in proportion as he has learned to conceal the marks of cost and design, while adding to them all those charms which affect the visitor with the highest emotions of pleasure.

Hence it happens that landscape gardens so often fail in producing that agreeable effect on the mind of the beholder, which he derives from the sight of another similar place covered with a spontaneous growth of trees and shrubbery. The proofs of the lavishment of a great deal of money, in spite of the absence of straight lines and formal arrangements, are too apparent in the clean gravelled walks, in the clearance of wild shrubbery under the trees, and in the general symptoms of expensive labour, exhibited in a thousand different ways. One might say that everything about it is perfectly natural, because the trees and other vegetation are the indigenous growth of the place, and in the very spot where Nature herself had planted them. I admit that everything seen there is natural; but the absence of other things which have been cleared away for the sake of elegance, destroys this desirable effect. The very efforts which have been made to give it a natural expression, if misdirected, may produce the opposite. A wealthy man cannot tolerate the growth of anything in his grounds that would seem to convey the impression of a want of neatness. Actuated by this spirit, he would root up, if requisite, thousands of native trees or shrubs, which, in their tangled confusion, are so pleasing to the sight about a rustic residence. By so doing, he exhibits in the aspect of his grounds the evidence of much expensive labour. The very neatness of their appearance mars their picturesque effects. No man who visits his place can fail to observe what is often termed an aristocratic expression, or the evidence, in one way or another, of a great deal of cost.

Let this landscape garden suddenly become the property of a less wealthy proprietor having but very limited means, and who will perhaps perform the labour part with little foreign assistance, and if there was no *geometrical precision* in laying out the walks and planting the trees, the place quickly recovers the naturalness of its appearance. The wild rose and the sweet fern reappear on the sides of the hills, and the rocky places are again overgrown with blackberry vines, or the low heaths. The sloe-bush springs up, and the thrush and the blackbird build their nest in the forks of the branches. Along the sides of the fences too the wild roses are seen again, with an undergrowth of other interesting low shrubs, and mixed with the greensward, in their season, you behold a crowd of wild anemones, stitchworts, buttercups, and wild geraniums.

The old gravelled walks have almost entirely disappeared, the grass has grown over them, and perhaps the ruts of the farmers' cartwheels, and the middle path made by the feet of men and horses, are all that remain of the ancient *aristocratic walk*. The grandeur of the old park is increased by the more ancient appearance of the trees, and the evidences of former expense and human labour are buried beneath an undergrowth of miscellaneous wild low trees and shrubs. The natural appearance of the grounds is at length fully restored; and their general aspect would, I believe, affect the minds of the majority of spectators more agreeably than when the small estate was in the most improved condition, in the hands of a wealthy owner.

It is not my aim to depreciate elegance, neatness, or grandeur; neither do I wish to recommend about a gentleman's estate the rusticity of a farm in the woods. A perfect naturalness is not attainable consistently with other indispensable designs. But were the wealthy owner of a place, like the one above described, guided by a desire to preserve in his grounds that simplicity which pervades all the works of Nature, he might easily have accomplished his purpose without any sacrifice of neatness or elegance. We should carefully distinguish between the *elegant* and the *finical*. But a man of ample wealth often allows his vanity to control his taste. If he resolves to make a landscape garden that shall harmonize with the beauty of nature, his ambition to advertise on the face of it the expense he lavished upon it spoils the whole effect. If his pecuniary means had been more limited he might have accomplished a better work. In his efforts to avoid the appearance of rusticity he has marred the face of Nature, either by decorating her with ornaments that do not *belong to her*, or by depriving her of some of those *natural ringlets* which always adorn her face when you see her in company with farmers and rustics.

An appearance of rusticity in any grounds, combined with neatness and beauty, is more pleasing than an equal degree of naturalness combined with the evidence of great cost. In these remarks I am not aiming to build up a theory. It is my object, by analysing the different emotions which are felt on beholding different scenes of combined nature and art, to ascertain their character and origin. If we can tell why men are pleased with one scene and displeased with another, we have, to a certain extent, acquired a knowledge of the principles of taste; and when employed in improving the face of Nature, we should not be guilty of those common errors, by which the beauty of a landscape is often destroyed. The exhibition of pride has been fatal, in hundreds of instances, to the picturesque effects of some magnificent grounds. Nothing is more difficult than to lay out a great expense on a tract of land, already moderately wooded, without injuring that beauty which originally belonged to it. There are more places ruined by *expense* than by *neglect*, on account of the scarcity, on the one hand, of that species of judgment which should belong to an improver of grounds, and the liberality of Nature, on the other hand, in raising up her bounties whenever she is left to act with perfect freedom.

(*To be continued.*)

INSTRUCTIONS FOR PRESERVING PLANTS.

BY LADY S. F—R.

It is unnecessary to enumerate all the advantages resulting from the possession of a collection of preserved plants, as they can be fully appreciated only by a person who has made considerable progress in the study of botany. But the beginner requires to be informed, that nothing can more materially aid him in his endeavours to become familiar with the objects which vegetation presents to his view than such a collection, to which he can at all times refer, either for refreshing his memory or for instituting a more minute examination than he had previously made. Plants are generally preserved by drying, and a collection of this kind is called a *Hortus siccus*, or *Herbarium*. Various methods are in use for drying plants, but the following being among the most simple and efficacious, and attended with little difficulty, is here preferred.

The articles necessary for the accomplishment of the object in view are—a quantity of smooth, soft paper, of large size (sixteen quires perhaps); eight boards of the same size, about an inch thick, of hard wood; four iron weights, or pieces of lead, two of them about forty pounds weight, the others half that amount; or, in place of these weights, a number of clean bricks may be used, or, in short, any heavy bodies of convenient form. Along with these articles, a botanical box is necessary. This box is made of tin, and varies in size, from nine inches to two feet in length, according to the taste and avidity of the collector.

In gathering plants for this purpose, such as are smaller than the size of the paper are to be taken up roots and all. In many cases, portions only of plants can be preserved, on account of their size, and then the most essential parts are to be selected, including always the flowers. Plants to be preserved are to be gathered in dry weather, and immediately deposited in the tin box, which prevents their becoming shrivelled by evaporation. If gathered in wet weather, they must be laid out for some time on a table or elsewhere, to undergo a partial drying. When roots have been taken up along with the stems, they ought to be first washed, and then exposed for some time to the air.

Let us now suppose that a dozen specimens are procured. Over one of the boards lay two or three sheets of the paper, on the uppermost of which spread out the plant to be dried, unfolding its various parts, not, however, so as to injure its natural appearance. A few of the flowers and leaves ought to be laid out with particular care. Over this specimen lay half a dozen sheets of paper, on the uppermost of which lay another plant as before, and so on successively, until the whole are disposed of. A few sheets are then laid upon the last, and a board placed over all.

Plants, viewed with reference to drying, may be divided into two classes, the one comprehending those which being thin, soft, and flexible, require little pressure to reduce them to a level, the other including such as being stiff and thick require much pressure. Supposing the above plants to have been of the first class, we lay upon the upper board one of the smaller weights. A series of more stubborn specimens being, in like manner, placed between other two boards, we lay one of the larger weights upon them.

Should more specimens be collected next day, they are disposed of in the same manner; and thus successively. At the end of three days generally, the plants first laid in are to be taken out, together with the paper about them. They are to be laid in fresh paper, three or four sheets being placed between every two plants, and the whole put between two boards, with a weight over them. The second series is similarly treated next day, and so on. The paper from which the plants have been removed is to be dried for future use.

There will thus be four sets of plants; two in the first stage of drying, and two in the second stage. The plants of the second stage sets should be taken out about three days after they have been deposited, and after dry paper has been put about them, returned to their places. The paper may thus be shifted until the plants be perfectly dry, when they are finally removed. Each plant is then placed in a sheet of dry paper, and along with it is deposited a slip of paper, on which are written the name of the plant, the place in which it was gathered, the time of gathering, the soil, and such other circumstances as may tend to elucidate the history of the species. Thus prepared, the plants are packed up in bundles, which gradually enlarge their dimensions, or increase in number till the end of the season.

Having in this manner arranged a certain number of plants, the collector has now to rearrange them. For this purpose he has to procure a quantity of good stout writing or printing paper of large size, folded into folio, which is to be stitched in coloured covers, making fasciculi of five or six sheets each. A quantity of fine large post or other writing paper, in half sheets, folio size, cut round the edges, is also to be at hand. Let a number of narrow slips of different lengths be cut from a piece of the same paper, and let some prepared isinglass or dissolved gum be in readiness, together with a camel-hair pencil. Take a dried plant, lay it upon a leaf of the fine cut paper, then fasten it down by means of a few of the slips, to which isinglass or gum has been applied, laid across the stem and some of the branches. Two or three slips are generally sufficient for a plant or specimen. In this manner all the dried plants destined to form part of the herbarium are treated. Write the name of each species on the top of the leaf, and transcribe the notice respecting the place in which it was gathered, etc., at the bottom. Then arrange the plant according to system, and lay one between every two pages of the fasciculi. The fasciculi are formed into bundles, by being laid alternately up and down upon each other, as they do not lie conveniently when the heads of the plants are all at the top of the bundle, because the stalks and roots are thicker than the flowers. These bundles, consisting each of ten fasciculi, may be covered by pieces of pasteboard tied by strings. The collection is kept on the shelves of a cabinet, or in a chest. To prevent the attacks of insects, it is necessary to keep beside it a piece of sponge soaked full of rectified oil of turpentine; and to ensure it against decay from damp, it ought to be kept in a dry and well-ventilated place.

The above is an orderly method of forming a herbarium; but many other expedients are resorted to. Most plants dry sufficiently well between the leaves of old books, and many collectors save themselves the trouble of forming a neat collection, by huddling up their specimens in the least expensive or laborious manner.

Another method of putting up dried plants is the following:—The specimens are fastened to leaves of stout paper of uniform size; the species are then arranged in order, and all those of the same genus are placed within one or more sheets of paper, on the outside of which the generic name is written. The generic fasciculi are then collected into bundles, on which are written the names of the classes and orders. Some persons keep their specimens loose, within sheets of paper. This method is the most convenient for the minute examination of the plants, but has disadvantages which render it inexpedient in ordinary cases.

VILMORIN ON THE FORMATION OF RACES, VARIETIES, AND HYBRIDS IN PLANTS.

BY W. H. MURRAY, N. B.

M. Vilmorin is well known to be more than ordinarily competent to speak upon this question, both from practical acquaintance with the subject, and study of the theoretical question. His observations and experiments form a continuation of those of his father, and date from half a century back. In the *Revue Horticole* I have explained my views, and they are well deserving of the attention both of the scientific man and of the practical cultivator. The following fragments, selected from his essay, and accompanied with a few notes, were published by M. Alphonse Decandolle, in the *Bibliothéque Universelle de Genève*, for August, 1852:—"Races;" *i. e.*, modifications of the species perpetuated by seed.—"If we reflect on what is occurring in a seed just sown, and about to give birth to a new individual, we may regard it as attracted—as regards the characters which the nascent plant is to possess—by two distinct and opposite forces (the word *force* is only used here in a comparative sense, and to render more clear the effects which we have to describe. It will be readily imagined that the cause—probably very complex—which produces these, cannot be classed with a *force* capable of direction and measurement, such as is understood by geometricians). These two forces, which act in contrary directions, and from the equilibrium of which results the fixity of the species, may thus be conceived; the first or centripetal force, is the result of the *law of resemblance between children and parents, or atavism;* the result of its action is to restrain within the limits assigned to the species the aberrations produced by the other force." The author here takes the word *atavism* in a wider sense than is commonly adopted, and departs from the sense indicated by the Latin word *atavi,* forefathers. The term atavism is applied to the resemblance of individuals—not to their parents in the first degree, but to ancestors of more distant connection (*Decandolle; Physiologie Végétale,* vol. ii. p. 737). However, M. Vilmorin soon returns to the common meaning of the word (Alph. Decandolle). The second or centrifugal force, resulting from the *law of individual differences,* or of *idiosyncrasy,* causes each of the individuals composing a species, supposing them even born from a single individual or couple, to present difficulties which constitute its peculiar physiognomy, and produce that *infinite variety in unity* which characterises the works of the Creator. For the sake of simplicity, we have just supposed atavism to constitute a single force; but when we reflect on it, we see that it presents rather a collection of forces acting pretty nearly in the same direction, and is composed of the influence or individual attraction of all the ancestors. Now, to facilitate the comprehension of this force, we must first consider abstractedly the form of resemblance to the mass of ancestors, which may be regarded as the attraction of the *type* of the species, and for which we shall reserve the name of atavism; then we must consider separately, and in a more special manner, the attraction or form of resemblance to the actual parent, which, less powerful, but acting at a smaller distance, tends to perpetuate in the progeny the characters peculiar to the immediate parent. So long as the parent has not departed in a material degree from the type of the species, the two forces act parallelly, and are blended; and the variations which may follow in such a case, through the law of idiosyncrasy, may present themselves indefinitely in all directions, without exhibiting a peculiar leaning to any one. It is different when the actual parent has varied in a marked manner from the type; the force of resemblance to the actual parent then becomes combined with that of the individual variations, and the result is an excess of deviation in the direction of the resultant of these two combined forces; or, if it be preferred, the individual variations will then radiate, not round the common centre of the type, but round a point situated on the line which separates the type from the variety first obtained. Abandoned to nature, individual variations almost always perish in the superabundant mass of individuals which are unceasingly undergoing destruction. Hence the fixity of natural species. But when collected by man, these variations are protected, their descendants become multiplied; obeying, then, the more complex laws which govern them, they produce their numerous modifications, which man has been able to fix for his own service. It is thus also that the influence of man, in exclusively choosing modified individuals to multiply the progeny, supplies a counterbalance in his constant efforts to the equally constant force of atavism, and thus succeeds in *emancipating* or fixing modified races. From the preceding considerations it will be evident that one of the points, which we regard as most essential, consists in combating, as efficiently as possible, the force which we have called *atavism.* Now this force, less direct in a manner than that of resemblance to the immediate parent, may perhaps act with great persistence. If I might use another comparison, borrowed from the laws of mechanics, I would say that on account of the distance of its point of origin, its decrease takes place in an almost imperceptible measure, in the course of the small number of generations on which man can exercise influence; while the decrease of the other force (that of resemblance to the actual parent) goes on in geometrical progression. I have therefore been led to set up a theory, which, however, I only present here now with extreme hesitation, on the subject of the course to be pursued in endeavouring to obtain varieties from a plant not yet subjected to modification. To obtain from a plant not yet modified varieties of a kind determined beforehand, I first apply myself to producing variation in any direction, selecting for the reproducer not that one of the accidental varieties which approaches nearest to the form I wish to obtain, but simply that which differs most from the type. In the second generation the same care would lead me to choose a deviation the greatest possible at first, then the most different from that which I should have chosen in the first place. The necessary result of following this course through several generations is an extreme tendency to vary in the product thus obtained. A further result—and this is the principal point in my opinion—is, that the force of atavism, exercised across very divergent influences, will have lost a great portion of its power; or, if I may again have recourse to that comparison, will act in a broken, instead of a straight and continuous line. It is only after having attained this result, which I shall call, if I may use the word, "destroying the polarity of the plant" (*affoler* is the word used), "that we should commence the pursuit of the variations approaching the form which we wish to obtain—a pursuit which will be facilitated by the enormously increased number of variations produced by the foregoing proceedings. We must then avoid variations which may present themselves, with the same care as we sought them at first, in order to give to the race we are endeavouring to form *constancy of habit*, which will be so much the easier to obtain, that the atavism—that incessant cause of destruction of the races of human creation—will have been weakened, by the intermediate links through which we have forced it, to exercise its influence. It will be seen, then, that in our view there are two very distinct phases in the pursuit of varieties—phases during which the courses to be followed are diametrically opposite. Up to the present time the first has been completely abandoned to what are called sports of nature; and the care of horticulturists has been limited to propagating and fixing accidental varieties. Perhaps it will appear premature to advance that this first phase may be subjected, equally with the second, to the influence of man. Nevertheless, the facts which have led me to this opinion are now sufficiently numerous to allow me a well-grounded hope of being able, before long, to show examples of the application of this method. For some time past there has been an appearance of proceeding in this direction, in the recommendation of artificial fertilization, for impressing on a type previously invariable a first modification, which may tend to a large number of others; but this plan has been applied most erroneously hitherto rather to varieties than to species. It seems requisite here to enter into certain special details, in order to render comprehensible the idea I entertain of the part which hybridity may play in the *creation of varieties*. The number of plants really hybrids, or results of the crossed fertilization two distinct *species*, is exceedingly limited; and even their existence is denied by some physiologists who refuse to their *mules* the power of reproducing by seeds. At the same time, certain sets or varieties in actual cultivation have, in my opinion, an evident hybrid origin. We may imagine in this case that the hybridation has only acted in the direction of destroying the polarity" (*affollment*), "and that the varieties to which they may give birth will only constitute distinct races, through a certain number of generations. As to the custom of fertilization *crossed between varieties*, they enter into the same mode of action, considerably increasing the extent of variation in the varieties already not very stable by themselves. It is to this class that belong the enormous quantity of hybrids with which florists fill their catalogues. Multiplied by divisions, their varieties form for them the source of interesting operations; and their excessive variability then becomes an advantage, since each sowing of their seeds produces new forms, calculated to satisfy the incessant desire for novelties of this kind manifested by amateurs."

NOTES ON NEW AND SELECT PLANTS.

1. **Amphicome Emodi.** Syn. *Incarvillea Emodi.* Nat. Ord. *Bignoniaceæ.* This very handsome flowering plant is a native of Emodi, in Northern India, where it was discovered growing upon the mountains on the Suen range of hills. Many of our readers know the pretty *Amphicome arguta*—the *A. Emodi* is *much handsomer.* It is a *perennial,* the stems dying down annually. It grows from one foot to one and a half high. The neat foliage resembles that of the garden *Burnet,* but more robust. The flowers are produced in terminal heads, at first *corymbose,* but afterwards *racemose.* Each blossom is funnel bell-shaped, the tubular part about three parts of an inch *wide,* and an inch and a quarter long; the five-parted flat limb (front of flower) is about two inches across. The tube is orange, the limb a rosy peach colour, and being produced in profusion, it is very showy and handsome. Seeds of this beautiful plant were sent to the Royal Gardens at Kew by Major Vicary, and a plant bloomed there in October last; it had been kept in a cool frame. (*Fig. in Bot. Mag.* 4890.)

2. **Cælogyne speciosa** (*the showy*). Nat. Ord. *Orchideæ.*—Mr. Thomas Lobb sent this fine species from Java to Messrs. Veitch several years ago. It is a free-growing and free-flowering stove plant. Each flower-stalk rises from four to six inches high, bearing one or two very large *drooping flowers.* Sepals and petals long, rather narrow, of a pale olive-green colour. *Lip* very large, two and a half inches long and one and a half broad; ground-colour principally yellow, variously tinged, blotched, and veined with rich blood-red or pitch colour; the broad terminating portion is white. A very interesting species. (*Fig. in Bot. Mag.* 4889.)

3. **Cordia superba.** Nat. Ord. *Boragineæ.*—A stove shrub, growing two to three feet high; leaves six to eight inches long and three

broad. The flowers are produced in terminal cymous heads, white tinged with yellow. Each blossom funnel bell-shaped, large; tube an inch and a half long, limb two and a half broad. Each terminal head has about twentyblossoms. (*Fig. in Bot. Mag.* 4888.)

4. DELPHINIUM CARDINALE. (*Scarlet-flowered Larkspur*). Nat. Ord. *Ranunculaceæ*. Our gardens have long been adorned with ***blue***, *white*, and ***purple*** coloured Larkspurs, but the greatest acquisition is the species under consideration, having large, brilliant, ***rich scarlet flowers***, with several small centre petals that are *yellow*. Mr. William Lobb discovered it in California, and sent it to Messrs. Veitch. It is an ***annual***, as hardy as the other annual kinds are. It grows from two to three feet high; the leaves are large; the flowers are produced in *long* terminal panicles. Each blossom is rather drooping, two inches long, including the spur, and an inch and a half across the front. It blooms in great profusion, and will prove one of the finest acquisitions to the flower garden that has been introduced for many years. It bloomed most charmingly in the Royal Gardens at Kew during the latter part of last summer. (*Fig. in Bot. Mag.* 4887.)

5. DENDROBIUM MACCARTHIÆ (*Mrs. MacCarthy's Dendrobium*). Nat. Ord. *Orchideæ*.—A very handsome flowering plant, native of Ceylon, but rare, and it is always found ***pendent*** from the trunks of large trees, in the forests about Ratuapoora and towards Galle; generally known to the natives under the name of Wissak-mal, which means "Rainy-month flower," or "May-flower." The stems are about two feet long, as thick as a goose-quill. The flowers are in racemes; each blossom is somewhat in appearance like a ***Gladiolus cardinalis***, about three inches long, and nearly four wide at the front, ***sepals*** and ***petals*** of a rosy purple colour, and the tip white, with numerous small purple spots on the throat, a dark purple blotch at the centre margined with pale purple, having also seven purple streaks. ***Column*** white. It merits a place in every stove collection. (***Fig. in Bot. Mag.*** 4886.)

6. CLEMATIS PATENS, var. ***Amalia***. Nat. Ord. ***Ranunculaceæ***.—Another pretty climber, belonging to the section of *C. azurea*. Each blossom is about five inches across, petals nearly an inch broad, tapering from the centre each way. Up the middle of each petal it is white, and the rest of a lavender-blue colour. M. Van Houtte has figured it in his excellent ***Flore des Serres***, 1051. Plants may be obtained from his establishment.

7. CLEMATIS PATENS, var. ***Louisa***.—This is a beautiful flowering plant. Each blossom is four inches across, petals ***broad***, pure white, and the centre of filaments forms a violet-coloured eye. It is remarkably handsome. (***Fig. in Flore des Serres***, 1052.) Plants may be had of M. Van Houtte, through the order of any nurseryman in England.

8. CANNA LILIIFLORA.—A magnificent flowering plant. It has fine large foliage, and its noble racemose spikes of flowers grow to

three or more feet high. Each blossom (Lily-formed) is about five inches long, and four across the front. The ground is white tinged with yellow, delicate rose, and green. It merits a place in every stove. (*Fig. in Flore des Serres.*) This very valuable acquisition was discovered at Veraguas, in Central America, by M. Joseph Van Warscewicz, and is now in M. Van Houtte's establishment; of whom plants may be had, or by order of any nurseryman in England. It succeeds well in the greenhouse, and in the open-air bed in summer.

9. ISOLOMA TRIANÆI. Nat. Ord. *Gesneriaceæ.*—A fine stove plant, first discovered by M. Triana (who was in the service of M. Linden, of Brussels) at New Granada; and subsequently obtained by M. Warscewicz at Santa Martha. It has bloomed in the Botanic Garden at Zurich. It has somewhat the appearance of a *Tydæa* or *Achimenes picta*, with entire green leaves of an oval shape, two and a half inches long. The flower-stems rise about two feet high. The flowers are produced in long spiked racemes, and in side axillary umbels, of three or four blossoms in each. Each flower has a long scarlet footstalk, and the blossom is ventricose tube-shaped, one inch long, of a bright cinnamon-red colour, with a yellow inside. It is a very neat, profuse-flowering plant, well deserving a place in every stove or warm greenhouse. (*Fig. in Flore des Serres*, 1057.)

10. HIBISCUS ROSA-SINENSIS ALBO-PLENO.—The double crimson and double buff Hibiscus have long been ornaments in our stoves. We have the pleasure now to notice a double white flowered. It is a free bloomer, and contrasts beautifully with the other kinds.

11. HIBISCUS ROSÆ-SINENSIS AURANTIA-PLENO.—This double orange coloured is also a beautiful addition, and very ornamental. Both the kinds are deserving a place in every stove. They may be procured at the principal London nurseries.

12. AZALEA ALBA-LUTESCENS.—Fine white, with a tinge of yellow at the centre, striped and spotted with red; very handsome. Messrs. Rollisson, of Tooting, possess plants of this for sale; also of the following:—

13. A. CRITERION.—Salmon-pink, edged with white; one of the finest of the genus.

14. A. GLEDSTANESII-FORMOSA.—Beautiful white, striped with cherry; a most profuse bloomer.

15. A. DUKE OF WELLINGTON.—Fine orange-scarlet, large size; stout petals of superb shape.

16. A. EXQUISITE.—Violet-pink, spotted with red, edged with white; very neat.

17. A. NARCISSIFLORA.—Double white; a most profuse bloomer, very pretty.

18. A. JULIANA.—Rich orange-crimson, numerously spotted with red, and fine shape.

19. A. STANLEYANA.—Bright rosy scarlet, and exquisite shape.

20. LAPAGERIA ALBA.—The *L. rosea* we figured some time back, since which time many of our readers have been gratified by seeing

plants of it in bloom. The present plant is of similar habit, and the flowers are *white*. It is a beautiful acquisition. Plants of it are in Messrs. Rollisson's nursery at Tooting. It flourishes in a cool greenhouse, shaded from mid-day sun.

21. Petunia Imperial.—The flowers are white, and double, as those of the *Gardenia florida-plena*.

22. Gloxinia erecta-coronata and the three following are of the *Fyfiana* section, viz. flowers erect, similar to the spring-flowering Gentian. The flower is white inside and outside, with a deep crimson rim at the throat.

23. Queen Victoria.—Beautiful rosy pink outside, inside white, and a maroon rim round the throat

24. Flammea.—White inside and outside, with a broad blue rim around the throat.

25. Alba-auriculata.—White inside and outside, with a cherry-coloured rim around the throat. All beautiful. They may be had of the principal nurserymen.

MISCELLANEOUS.

The Culture of Flowers. *By a Lady.*—I very recently met with the following remarks on the culture of flowers, and was so much pleased with them as to be induced to forward them for insertion in the first number of your volume for 1856. When summer's delightful season arrives, rarely in this country too warm to be enjoyed throughout the day in the open air, there is nothing more grateful than a profusion of choice flowers around and within our dwellings. The humblest apartments ornamented with these beautiful productions of nature have, in my view, a more delightful effect than the proudest saloons with gilded ceilings and hangings of Genoa velvet. The richness of the latter, indeed, would be heightened, and their elegance increased, by the judicious introduction of flowers and foliage with them. The odour of flowers, the cool appearance of the dark green leaves of some species, and the beautiful tints and varied forms of others, are singularly grateful to the sight, and refreshing at the same time. Vases of Etruscan mould, containing plants of the commonest kind, offer those lines of beauty which the eye delights in following; and variform leaves hanging festooned over them, and shading them, if they be of a light colour, with a soft grateful hue, add much to their pleasing effect. These decorations are simple and cheap.

Lord Bacon, whose magnificence of mind exempts him from every objection as a model for the rest of mankind (in all but the unfortunate error to which perhaps his sordid pursuit in life led him, to the degradation of his nobler intellect), was enthusiastically attached to flowers, and kept a succession of them about him in his study and at his table. Now the union of books and flowers is more particularly agreeable. Nothing, in my view, is half so delightful as a library set off with these beautiful productions of the earth during summer, or, indeed, any season of the year. A library or study, opening on green turf, and having the view of a distant rugged country, with a peep at the ocean between hills, a small fertile space forming the nearest ground, and an easy chair and books, is just as much of local enjoyment as a thinking man can desire. I reck t if under a thatched or slated roof, to me it is the same thing. A favourite author my table, in the midst of my bouquets, and I speedily forget how the rest of the ld wags. I fancy I am enjoying nature and art together, a consummation of luxury never palls upon the appetite—a dessert of uncloying sweets.

here is something delightful in the use which the Eastern poets, particularly the sian, make of flowers in their poetry. Their allusions are not casual, and in the way of metaphor and simile only; they seem really to hold them in high admiration. I am not aware that the flowers of Persia, except the rose, are more beautiful or more various than those of other countries. Perhaps England, including her gardens, greenhouses, and fields, having introduced a vast variety from every climate, may exhibit a list unrivalled, as a whole, in odour and beauty. Yet flowers are not with us held in such high estimation as among the Orientals, if we are to judge from their poets. Bowers of roses and flowers are perpetually alluded to in the writings of Eastern poets. The Turks, and indeed the Orientals in general, have few images of voluptuousness without the richest flowers contributing towards them. The noblest palaces, where gilding, damask, and fine carpeting abound, would be essentially wanting in luxury without flowers. It cannot be from their odour alone that they are thus identified with pleasure; it is from their union of exquisite hues, fragrance, and beautiful forms that they raise a sentiment of voluptuousness in the mind; for whatever unites these qualities can scarcely do otherwise.

Whoever virtuously despises the opinion that simple and cheap pleasures, not only good, but in the very best taste, are of no value because they want a meretricious rarity, will fill their apartments with a succession of our better garden flowers. It has been said that flowers placed in bedrooms are not wholesome. Plucked and put into water they quickly decay, and, doubtless, give out a putrescent air; when alive and growing there need not be any danger apprehended from them, provided fresh air is frequently introduced. For spacious rooms the better kinds, during warm weather, are those which have a large leaf and bossy flower. Large leaves have a very agreeable effect on the senses; their rich green is grateful to the sight; of this kind the Hydrangea is remarkably well adapted for apartments, but it requires plenty of water. Those who have a greenhouse connected with their dwellings have the conveniences, by management, of changing their plants as the flowers decay; those who have not, and yet have space to afford them light and occasionally air, may rear most of those kinds under their own roofs which may be applied for ornament in summer. Vases of plaster, modelled from the antique, may be stained any colour most agreeable to the fancy, and fitted with tin cases to contain the earthen pots of flowers, to prevent the damp from acting on them, will look exceedingly well. The infinite variety of Roses, including small plants of the Rhododendron, and other plants of similar growth, are fitted for the saloon, but they please best in the library. They should be intermingled with the bookcases, and stands filled with them should be placed wherever practicable. They are a wonderful relief to the student. There is always about them a something that infuses a sensation of placid joy, cheering and refreshing. Perhaps they were first introduced at festivals, in consequence of their possessing this quality. A flower garden is the scene of pleasurable feelings of innocence and elegance. The introduction of flowers into our rooms infuses the same sensations, but intermingles them more with our domestic comforts; so that we feel, as it were, in closer contact with them. The succession might be kept up for the greater part of the year; and even in winter, evergreens will supply their places, and, in some respects, contrast well with the season. Many fail in preserving the beauty of plants in their apartments, because they do not give them sufficient light; some species do well with much less light than others. Light is as necessary to them as air. They should not be too often shifted from one place to another. Those who will take the trouble may quicken the growth of some plants, so as to have spring flowers in winter. Thus autumn and spring might be connected; and flowers blooming in the winter of our gloomy climate possess double attractions. For my own part, I manage very well without the advantage of a greenhouse. The evergreens serve me in winter. Then the Lilacs come in, followed by the Guelder Rose, Woodbine, and Climbing Roses; which I have trained in a pot upon circular trellis-work. After these there can be no difficulty in choosing, as the open air offers every variety. I arrange all my library and parlour plants in a room in my dwelling-house facing the south, having a full portion of light, and a fire-place. I promote the growth of my flowers, for the early part of the year, by steam-warmth, and having large tubs and boxes of earth, I am at no loss, in my humble conservatory, for attending them is all my own, and is one of those employments which never appear laborious. Those who have better conveniences may proceed on a large scale; but I contrive to keep up a due succession, which to a floral epicure is everything. To be a day in the year without seeing a flower is a novelty to me; and I am persuaded much more might be done with my humble means than I have effected, had I sufficient leisure to attend to the retarding or forcing them. I cover every space in my sitting-room with the beautiful fairy things of creation, and take so much delight in the sight of them, that I cannot help recommending those of limited incomes, like myself, to follow my example and be their own nurserymen. The rich might easily obtain them without; but what they procure by gold the individual of small means must obtain by industry. I know there are persons to whom the flowers of Paradise would be objects of indifference; but who can imitate or envy such? They are grovellers, whose coarseness of taste is only fitted for the grossest food of life. The pleasures of flowers and books are, as Henry IV. observed of his child, "the property of all the world."

QUESTIONS, ANSWERS, AND REMARKS.

ON CHANGING THE COLOUR OF THE FLOWERS OF ELICHRYSUM, ETC.—Would you or any of your numerous readers, be kind enough to inform me how they change the colour of the *Gnaphalium* (Everlasting) flowers, and what they do it with, and which variety it is? and likewise could you inform me which is the best angle for a plant stove and a greenhouse? An answer will be thankfully received by—*A Young Amateur Florist.*

[We judge our correspondent refers to the *Elichrysum* flowers exhibited for sale in Covent Garden, the Pantheon in Oxford-street, etc., in London. They are the flowers of the *E. arenarium*, and are imported from France; there they are grown extensively for the purpose. In the natural state the flowers are yellow, but by a process of dyeing they are coloured blue, green, red, etc., as offered for sale. The plant is a hardy herbaceous plant, grows and blooms freely in this country, and may be procured at most nursery establishments. The *E. margaritissimum*, the pearl species, grows and blooms more vigorously, and having large heads of flowers, would look even better than *E. arenarium*. By the same process of dyeing any of the Everlasting flowers might be rendered more interesting by contrast of colours. The nearer south the houses can be placed the better; light and heat are proportionately obtained by natural means, and save a great deal of firing, in other respects necessary.—*Editor.*]

ON BONE-DUST IN COMPOST FOR GERANIUMS.—Can you, or some reader, inform me, through the medium of your Florist's Magazine, whether any of your subscribers are in the habit of growing Geraniums in compost of bone-dust, and, if so, in what proportion to the soil? I should also be glad to hear if it is advantageous to Dahlias, Pansies, or any other of the most popular kind of flowers.—*A New Subscriber.*

ON BLOOMING THE AMARYLLIS.—I shall feel greatly obliged if yourself or any of your correspondents will inform me which is the best way to flower the Amaryllis tribe in pots. I obtained a few roots three or four years ago, and they blossomed the first year, but not since.—*A Subscriber.*

CULTURE OF CACTUSES.—A correspondent requesting instructions on the culture of the *Cactus*, I herewith send you some practical observations, which are part of an excellent communication by Mr. Green, gardener to Sir Edward Antrobus, Bart.:—"The compost that I use," observes Mr. Green, "is an equal quantity of light turfy loam and pigeon's dung, and one-third sheep's dung, exposing the mixture one year to the influence of the summer's sun and winter's frost to mellow. When wanted for use, I had one-third of sandy peat, in both cases mixing them well together. I grow the young plants from February to July in the forcing flower-house, kept from 35° to 60° Fahr. I afterwards remove them to a shelf in an airy situation in the greenhouse, exposed to the mid-day sun, giving them plenty of air and little water. The plants that I want to flower the following September are placed in the forcing-house the first week in December, giving them very little water for the first ten days, and gradually increasing the water as the plants advance in growth. About the 1st of February I stop all the young shoots, which soon become well ripened; from this time, I decrease the quantity of water until they become quite dry, in order to throw the plants in a state of rest. In the beginning of March, I replace them in a cold shady situation in the greenhouse, treating them as before. For plants to flower in August, I place a quantity more in the forcing-house the first week in January, treating them the same as those for September; only they are put to rest in the greenhouse a fortnight later, and replaced in the forcing-house one week sooner. The first flowering plants are put in the forcing-house the end of January, and will come in flower about the middle of March. When these plants have done flowering, and are removed from the drawing-room or greenhouse, I prune out most of the old shoots that have flowered, so that the plants are furnished regularly with young shoots for flowering the ensuing year; these plants are also placed in the forcing-house for ten days, to ripen the young wood and dry up the moisture, and are then put to rest in the greenhouse as usual; such plants will flower a second time in October. Others put in the forcing-house the middle of February will flower about the end of April; if then pruned, and dried, and put to rest as before, they will flower a second time in November, and so on in proportion. I repot them at all seasons whenever the plants may require it, always observing to keep the pots well drained with potsherds, that the moisture may pass off readily. This process may be considered troublesome, but superior growth and abundance of flowers amply show the care bestowed. By the above treatment, *C. speciosus* and *Jenkinsoni* have generally produced from ninety to a hundred fine expanded flowers at one year old. The plants that I sent to the Society (May 21, 1833) were about two years old; the *C. speciosus* bore two hundred flowers, *C. speciosissimus* seventy-two, *C. Jenkinsoni* one hundred and ninety-four. I prefer growing them in wooden tubs, with nice stakes fixed to the tub, to the usual mode of supporting them by sticks driven into the ball of the plant, which I consider injures the fibre, and makes the plant appear unsightly.

STOKE NEWINGTON (near London) CHRYSANTHEMUM EXHIBITION was held no November 14, and excelled any previous one.

LARGE FLOWERED.—*Best six Varieties:* Pilot, Christine, Chevalier Dumage, Madame Bucharest, Annie Salter, Defiance, Mr. James. *Best twenty-four Varieties:* Duke, King, Themis, Madame Gordereau, Aregina, Nonpareil, Pio Nono, Beauty, Lysias, Formosum, Dupont de l'Eure, Madama Audry, Plutus, Hermione, Virgil, Arc-en-Ciel, Stafford, Leon Laquay, Rosa mystica, Anaxa, Miss Kate, Defiance, Two coloured Incurved. *Best six Pompones:* 1st. La Sultana, La Gitana, Bob, Drine Drine, Requiqui, Cedo nulli, Mr. Weatherhill. 2nd. La Vogue, Cedo nulli, Drine Drine, La Gitana, Comte Achille Vigni, Madame de Vatry, Mr. Edwards. 3rd. Cedo nulli, Bob, Modele, Crostignac, Helene, Bijou d'Horticulture, Mr. Scruby. *Best six Anemone Varieties:* Gluck, Fleure de Marie, Marguerite d'Anjou, Sulphureum pallidum, Marguerite de York, Astre du Matin.

STRIKING CUTTINGS.—Whether will cuttings of hard-wooded plants strike quicker and best, in a hot or in a cold frame? [It depends entirely on the circumstances of the plant from which cuttings are taken. If that is excited, and growing freely, then a little heat would be best. If in a dormant state, put them in a cold frame. For instance, here are Calceolaria cuttings taken from plants out of doors; put them in heat now, and if a ticklish sort, the most of them will bid you good-bye. Place them under a hand-light in a shady border, and just keep frost from them, and every one will strike, though they may take six or more weeks to do so. Take the tops of these same plants, or cuttings, when growing freely, next March or April, and place them as cuttings in a mild hotbed, and they will strike in fewer days than they required weeks in autumn. Reason and think on this simple fact, and a key will be given you to unlock all the secrets as to the position and heat certain cuttings should have.—*Editor.*]

TREATMENT OF CANTUA DEPENDENS.—I observe that a correspondent writes that in July he procured two plants, one was placed in a *stove* and the other in a *greenhouse.* The former grew the fastest for a month, and then the foliage turned yellow, this was caused by an attack of the red spider; the *warm* (not hot) flue where the plant was placed had a little whitewash in which a portion of sulphur was mixed, and in a few hours all the insects were destroyed, still the plant has not yet recovered the disaster. The plant placed in a cool greenhouse has grown well, and has continued in excellent health. It is quite evident therefore that the plant will not thrive in the stove, but must be kept in a cool, dry greenhouse, or pit-frame, if grown in pots, and in summer I find it will flourish in the open ground.—*A Subscriber.*

THE CHINESE PRIMROSE.—Allow me to correct your correspondent "R. M." in his statement that his conservatory is as gay as it well can be, with all the best varieties of this useful flower. That his plants are good, I do not doubt, but as he says that he raises them all from seed every year, I imagine that his collection would be greatly improved if he would grow a few good plants of the double purple and double white, as I think them superior to the single varieties, either for the conservatory or the bouquet; and as they are as easily cultivated as the latter, I am of opinion that no one should be without them. My method of growing them is as follows. As soon as the plants have done blooming, which is in the latter part of March, or beginning of April, I place them in any cool pit or house for two or three weeks, to renovate them after their exhaustion from blooming. I then examine them, and select what shoots I want to propagate for my next year's stock; but instead of cutting them clean off the plant and striking them singly, as is recommended by some, I layer them in the same way as Carnations, etc., are done, rounding the pot well up with light sandy soil, or pure sand, and watering with a fine-rosed pot until it is well settled. I then place them in any close frame or propagating house, until they are well rooted, which they will be in a few weeks, and ready to pot off; the largest and best rooted I put into three-inch pots, and the others in proportion, but always taking care never to over-pot them, as they do better under than over potted, and never to shift them into larger pots after September. The soil I use is composed of one-half leaf-mould, and one quarter each of loam and peat, the whole being well incorporated with small charcoal and sand.—*Gardener's Chronicle.*

DOUBLE YELLOW ROSE.—A great deal having been said about the Double Yellow Rose, the following extract from a work called "Dictionarium Rusticum," 8vo, third edition, 1726, may not prove uninteresting to your readers:—"The Double Yellow Rose bears not so well when thus natural, nor in the sun, as other Roses do, but must be placed in the shade; and for its better bearing and having of the fairest flower, first, in the stock of a Frankfort Rose put in the bud of a Single Yellow Rose near the ground; that will quickly shoot a good length; then slip into it a bud of Double Yellow Rose of the best kind, at about a foot high in that sprout. Keep suckers from the root, as in all other inoculated Roses, and rub off all the buds but of the desired kind. When big enough to bear, prune it at the approach of winter, cutting off all the small shoots, only leaving the bigger, the tops of which are also to be cut off as far as they are small. When it buds for leaves in the spring, rub off the smallest of them; and when for flower, if too many, let the smallest be wiped off, leaving as many of the fairest as the strength of the tree will bring to perfection, which should be a standard, not set by a wall, and rather shaded than in too much heat of the sun, and watered sometimes in dry weather, by which means fair and beautiful flowers may be timely brought forth."—*W. W. Page.*

PROTECTING TENDER KINDS OF ROSES.—Some of the tenderest Standard Bourbon, Noisette, and Tea-scented Roses will require winter protection. The best plan I have found to succeed is to prune in the head as desired, and then spread among the shoots branches of furze, securing them with tar-band. This covering is such that it protects wholly from injury, and at the same time admits sufficient air to prevent the too early pushing of the buds, which, if not done, they would be liable to be damaged by early spring frost. I take off the covering about the first week of March. For dwarf plants I stick furze branches into the ground, and secure them at the place by a few sticks put round. Over the roots I lay about six inches deep of dry leaves, covering them over with a sprinkling of soil, sloping to the sides as the Editor recommended for Fuchsias, etc.; this entirely preserves from injury.—*Rosa.*

NOTES ON FLOWERS.—Flowers, of all created things, are the most innocent and simple, and most superbly complex; playthings for childhood, ornaments of the grave, and the companion of the cold corpse in the coffin. Flowers, beloved by the wandering idiot, and studied by the deep thinking man of science! Flowers, that of perishing things are most perishing, yet of all earthly things are the most heavenly. Flowers, that unceasingly expand to heaven their grateful and to man their cheerful looks—partners of uman joy, smoothers of human sorrow; fit emblems of the victor's triumphs, of the young bride's blushes; welcome to crowded halls, and graceful upon solitary graves! . . . Flowers are, in the volume of nature, what the expression "God is love" is in the volume of revelation . . . What a dreary desolate place would be a world without a flower! It would be a face without a smile—a feast without a welcome . . . Are not flowers the stars of the earth, and are not flowers the stars of heaven? One cannot look closely at the structure of a flower without loving it. They are emblems and manifestations of God's love to the creation, and they are the means and ministrations of man's love to his fellow-creatures; for they first awaken in his mind a sense of the beautiful and the good . . . The very inutility of flowers is their excellence and great beauty; for they lead us to thoughts of generosity and moral beauty, detached from and superior to all selfishness; so that they are pretty lessons in nature's book of instruction, teaching man that he liveth not by bread or from bread alone, but that he hath another than an animal life.

STRIKING CUTTINGS OF STOVE AND GREENHOUSE PLANTS IN BURNT CLAY.—Three years ago I was advised to try this kind of material; and having done so with the greatest success, I can most confidently recommend it to the readers of your Magazine. My collection comprises nearly all the best of stove and greenhouse plants. Burnt clay possesses the property of absorbing *ammonia* from the *atmosphere*, which affords a constant and regular stimulus to the cuttings, and enables them very quickly to send out the radical fibres. I strike a great number of the cuttings from single eyes; that is, cut it through horizontally close under the bud, leave the leaf entire, and cut off the shoot about an inch above the bud. I plunge the pots one-third deep in a slight tan-bed. I do not lose five in a hundred cuttings so treated.—*A London Nurseryman's Plant Propagator.*

ON THE WIRE-WORM.—Having seen many inquiries respecting the manner in which the wire-worm might be destroyed, induces me to send you my method of treatment for their destruction. For nearly two or three seasons I had nearly all my Dahlia plants destroyed by those destructive pests, the wire-worm. After having tried various experiments, that of burnt earth succeeded entirely to my satisfaction, not having a plant the following season injured. Thinking this might prove beneficial to numbers of your readers, if you think it worth insertion it is at your service. The burnt earth may be made by burning the refuse of the garden in dry weather.—*A Florist.*

EUPHORBIA SPLENDENS.—If we take a retrospect of the plants that have been introduced into the stoves of Great Britain within the last few years, not one has preference to the *Euphorbia splendens:* the length of time the floral involucre continues expanded, and the elegant growth of the plant, if properly managed, give it a decided pre-eminence among stove plants. *Cultivation.*—Mix equal quantities of loam, peat, and rotten cow-dung with a little sand. If cow-dung cannot be got, any very rotten manure will do. *Cuttings* will strike very freely in sand. After they are struck, pot them off into sixty pots, and shift them regularly as the pots become full of roots. It is very necessary to stop the terminal stoots frequently, otherwise the plant will grow very deformed, or, as gardeners term it, be long-legged. When the pot is full of roots, the plant will flower, even if it be very small; so it must be observed, that if cultivators desire to have large plants, they must shift them frequently until they wish them to show their involucre. —*A Subscriber.*

ON BLOOMING AGAPANTHUS UMBELLATUS.—I have most successfully cultivated the *Agapanthus umbellatus*, both blue and white flowered, for some years, by the following treatment:—I put my plants under the stage in the greenhouse during the *winter months*, or a dry shed will serve as well. I give them no water while in this state. I take them out in the beginning of April, and part them to one stem, then place them in 16-sized pots (or pots one foot in diameter), using any vegetable mould, with one part sand. They are then watered to settle the mould, and placed in a warm situation. I water them twice a day in the summer months, but do not stand them in water. I have heads of flowers as large as the finest common Hydrangea. After they have done flowering, the old stems are cut down, and placed in a cold, shady spot till November, when they are moved to their winter quarters. They will also succeed if turned out into a bed of rich mould, and plentifully watered.

On the Growth of Plants, etc.—When plants advance but little in their growth, and assume a very dark or blue-green colour, it shows a want of water, or an obstruction to the action of the capillary attraction; and when a plant is of a light green colour, and is diminutive and puny in its growth, and there is evidently no want of water, it shows a want of carbonaceous matter, or a general deficiency of nutriment. If plants and trees grow very luxuriantly in branches, forming large leaves, and producing little fruit, it shows that there is a luxuriant supply of hydro-carbonate, or an excess of carbonaceous matter, lying at a great depth from the surface, and a want oi oxygen; when the leaves and branches are deformed and distorted by blisters and blotches, and by irregular contractions and contortions of the stalks, fibres, veins, or ribs of the leaves, or when tumours break out on the leaves and shoots, it shows that an excess of putrescent carbonaceous matter containing nitrogen surrounds the roots.—*Hayward on Horticulture.*

On Verbena Seed.—Last autumn I saved a quantity of Verbena seed collected from a bed containing twenty of the best kinds. I have sown it in a bed with other annuals, but not one has come up. For the future, *when and how am I to sow and afterwards treat the plants*—also, will they bloom the ensuing summer?—*Emily*, July 3.

[Sow the seeds in pots, in March, on a fine and smooth surface of good loam, and after pressing the seeds to the soil, just cover them with some finely sifted, and place the pots in a cucumber frame at work. When the plants are large enough, transplant them, several into a small pot. After they have struck root, again remove them to where more air can be given, and so to inure them to the climate, that by the middle of May they may be fit to plant in the open garden, where they will bloom by the end of June or early in July, unless some casualty prevent.—*Editor.*]

Mildew of Plants.—I shall feel grateful if you will insert the following remarks on preventing mildews from attacking plants. I have, like others, made ineffectual attempts with sulphur and other substances to oppose the destructive fungus of the vine, and those of other plants, for all cultivated plants are subject to disease, and have their peculiar mildews. Seven years ago I wrote to the *Times*, saying that the *sun* is the cause of these diseases, and I say the same now. I have found from several years' experience, that by taking care to shade my cucumbers on the first *bright day* after several days of *dull weather*, I prevented the development of mildew. Similar experiments with vines had the same result; while, where the shade was off the glass, the plants beneath were mildewed. In support of this I may mention a large grape-growing establishment at Vauxhall, in the midst of soot and dirt. In this place not the least appearance of mildew has been seen through the years of the disease, for the glass has always been covered with soot and dirt, which has protected the plants from *sudden outbreaks* of sunshine. I have tried three remedies against mildews; shading the grape-house with canvas, and avoiding all cold draughts; covering the pits and frames with mats; and last and easiest, simply wetting the glass, and dusting over the lights with dry mould. I am thoroughly convinced that partial shading in any way is the most *effectual prevention* against mildews in plants. It gives the overgorged leaves time to evaporate and elaborate the sap, and secures the breathing pores from being injured by a *sudden* and *abundant* transpiration, when the sun comes out brightly after a continuance of cool and sunless days. I have proved two years, where vines were allowed to fall down within a few inches of the ground no mildew came upon either the leaf or the fruit. This, again, is proof positive of the shading process. If this plan could be carried out in the wine countries, I am convinced the mildew would soon disappear. —*James Cuthill, Camberwell.*

Luculia Gratissima.—As there are many persons who have not the means at command to grow this magnificent flowering plant in a conservatory, etc., I beg to remark that by the following attention I grow it admirably in a pot. I find it is a point specially to be attended to, not to stimulate it to grow in spring and the early part of summer, as it is not naturally inclined to do. I keep my plants in the greenhouse till about the middle of June, then plant them out, balls entire, in the open border, in a situation that is warm, but shaded from mid-day sun. I take them up again, keeping all the small fibrous roots I can uninjured, the first week in September, putting them into additional sized pots, and place them in a vinery and plant-stove of moderate temperature; they grow strongly and soon produce heads for blooming, which display their beauty and fragrance through autumn and winter.—*Senex, Middlesex.*

ON THE MAGNOLIA.—I have two Magnolia plants of *grandiflora,* which have been in my possession fourteen years, but which have not bloomed. Four years back I removed them in order to induce them to flower: but although they grow well since, there is no signs of my object being realized. If some reader of the *Cabinet* would favour me with particulars to adopt so as to obtain a bloom, I should esteem it a great kindness. They are trained on an eastern aspect of my house, and are twenty feet high.—*J. Smith, sen.*

ON THE APPLICATION OF CHARCOAL IN THE SOIL IN WHICH PELARGONIUMS ARE GROWING.—In the early part of last spring I saw an article in the *Cabinet* recommending bits of charcoal to be mixed in compost used in pot culture of plants. Having a quantity of young Pelargoniums to pot, I adopted the plan by sprinkling about one-eighth with the rich turfy loam and vegetable soil, and, having a free drainage, nothing can exceed the deep green beauty and vigour of the plants at this time.—*An Amateur.*

ON PLANTS AFFECTED WITH MILDEW.—In a former number of the *Cabinet* I observed a correspondent stated that during several previous months a quantity of his Pelargoniums and other plants had suffered from mildew, although the house was not a cold or damp one. I was similarly circumstanced, and being advised to water them at the roots once a week with nitre dissolved in water, in the proportion of a quarter of an ounce to a quart of water, I did so through the remainder of last autumn, and now have not a vestige of the mildew.—*S. R. Bennet.*

ON VERBENA SEED—Last autumn I saved a quantity of Verbena seed, collected from a bed containing twenty of the best kinds. When and how am I to sow and afterwards treat the plants? also, will they bloom the ensuing summer?—*Juvenis.*

[Sow the seeds in pots in March, on a fine and smooth surface of good loam, and after pressing the seeds to the soil, just cover them with some finely sifted, and place the pots in a cucumber frame at work. When the plants are large enough, transplant them, several into a small pot. After they have struck root, again remove them to where more air can be given, and so to inure them to the climate, that by the middle of May they may be fit to plant in the open garden, where they will bloom by the end of June or early in Jnly, unless some casualty prevent.—*Editor.*]

FLORAL OPERATIONS FOR JANUARY.

FLOWER GARDEN.—Annuals sown in autumn must be kept free from fallen leaves or other litter, or will rot; and towards the end of the month, if fine, sow a few more either in small pots kept in a cool frame, or sow in the open ground in patches, covering deeper than done in spring. Bulbs, protect beds of, for if the embryo flowers or leaves, even within the ground, be affected by frost, their blossoms will be defective. Flower-beds must have an addition of one-third of fresh loam, with some leaf-mould, or well-rotted manure; this will induce the plants to bloom more profusely. The upper part of the bed, in which robust-growing plants are to be, should always be richest, to encourage the plants to grow rapidly at first, and the bottom portion being poor, when the roots push into it, the growth of foliage will be checked, and the bloom will produce a finer display. Dahlias, to propagate early, put the roots into pots or beds, where bottom heat can be given immediately; the plants will be strong by the end of April. Gladioluses,—such as *Gandavensis, Psittacinus,* and their varieties; plant a few to succeed the autumn-planted, and do so in February, March, and April, and a bloom till November will be had. Pinks and Pansies: small sticks should be pricked among the shoots, to prevent the wind twisting the plant off. Let the soil be pressed closely round the main stem. A low hedge of fir or yew branches pricked in at the edge of the bed will check strong winds. Those in pots give plenty of air. Hares and rabbits are enemies to Pinks and Carnations; if a good sprinkling of soot over the foliage be applied, the plants may be saved. Carnations, Auriculas, etc., in pots, must have all dry air allowed, and save them from frost and excess of water. The like attention must be paid to all tender or half-hardy plants, in pots or frames; guard against wet, and remove decayed leaves. Throw out the soil where the Ranunculus and Anemone bed is to be, half a yard deep, so that it may be sweetened prior to putting in the compost in February. Lobelias, the tall section, must be kept from frost, and nearly dry. Roses and Hollyhocks plant as soon as possible. Auricula and Polyanthus seed sow in pots, and place them in a cool frame. Shrubs: layers of most kinds may now be made, and cuttings of Privet, also all deciduous shrubs, may be put in; they will succeed well if put in firmly, and each cutting be cut off close below a bud. Prune Roses, protect the heads of tender ones, and if they have their heads washed over with soot and lime liquid, it will kill moss and insects, and promote the health of the plants. Tulips, Hyacinths, etc.: be careful to have the soil closed well around the leaves of such as appear; mild weather will cause some to rise early; protect from frost, but remove the covering at all proper times. Box: edgings of it should always be made early in autumn, but if required now may be done. Verbenas: give all dry air, and have the soil barely moist; to propagate early, place some in moderate warmth; guard against green fly and mildew. If any tender plants be frozen, sprinkle them overhead with cold water, and place them in a cool shed from frost, but where they will be gradually thawed.

GREENHOUSE.—Except in very foggy weather, give all the air possible, especially where there are Heaths, Epacris, Azaleas, and New Holland plants in general, that are not required to bloom early; also water the plants in the morning that the damp may be dried up soon; apply a little fire-heat occasionally to dry the house, often stir the surface-soil in pots. Take off all decayed leaves; cleanliness is essential to have the plants in health. Tropæolums: the *tricolorum* and other tuberous-rooted must now be potted, in order to bloom well the coming season. Fuchsias: prune in, and repot the large plants required to bloom early; plants now put into higher temperature will soon push shoots, and furnish a supply for striking, to form the new plants for 1856. *Tropæolum Lobbianum*, *Hookerianum*, and *Triomphe de Gand*, are fine blooming ornaments now. Camellias: the soil must be regularly moist, or the flower-buds will drop; give manure-water once or twice a week; thin the flower-buds, if now crowded. Cinerarias: watch for the enemy—green fly; fumigate immediately one is seen; repot such as require it; also pot off Alstrœmerias, Ixias, and Oxalis, *with any other* greenhouse bulbous-rooted plants, by the middle of the month. Sow seeds of tender annuals required to ornament the greenhouse early in summer. Pelargoniums: spread the branches, to form the plant regularly in every part by duly tying them outwards, drawing some down, to form it bushy to the rim of the pot. Fumigate the greenhouse stock of plants. Azaleas: place the plants of any it is desirable to increase in extra warmth, to induce an early growth, as cuttings strike much the best early in spring, rooting freely in silver sand and gentle bottom heat; the half-ripened new shoots are the best.

FORCING STOVE, FRAME, ETC.—Achimenes: place some of them in heat, to bloom early. Give one good watering at first, and then just keep the soil moist till the plants are about an inch long; then pot singly, or a plant or two more in each pot. Also some Gloxinias and Gesnerias, for early bloom; do not put them where they will have a strong bottom heat, for if their vegetation be hastened too rapidly, they will be likely to be destroyed. Sow seed of stove plants, hard-shelled ones steep in water heated to 180 degrees; let them remain till the water is cool, then sow. The following plants are excellent for winter blooming, and force well: Scarlet Geraniums, Eranthemums, Justicias, Aphelandra, *Poinsettia pulcherrima*, *Achimenes picta*, Coronillas, Ribes, Lily of the Valley, Violets, Cytisus, Cinerarias, *Gesneria zebrina*, Roses, Persian Lilacs, Chinese Primroses, Azaleas, Acacias, Sericographus, Pinks, Tree Carnations, Cactus, and Bulbous tribes. Succulents must have but little water. Sow seeds of Cockscomb, Balsam, Globe Amaranthus, Salpiglossis, Brachycoma, and Chinese Primrose, about the middle of the month, for early bloom. Also, repot Amaryllis, Sprekelias, etc. Cuttings of bedding plants may be put in, and if the old plants have not a supply, place some in higher heat to push them, such as Fuchsias, Salviss, Heliotropes, Cupheas, etc. Bouvardias increase best by cutting the roots into bits an inch long, and cover them half an inch with silver sand.

THE

Gardener's & Naturalist's

ALMANACK,

AND COMPANION TO THE

FLORICULTURAL CABINET,

FOR THE YEAR OF OUR LORD,

1856.

LONDON:
SIMPKIN, MARSHALL, & CO.,
STATIONERS' HALL COURT.

CHRONOLOGICAL NOTES FOR THE YEAR 1856.

Golden Number	14	Dominical Letters	F E
Epact	23	Roman Indiction	14
Solar Cycle	17	Julian Period	6569

ECLIPSES.

During this year there will be four Eclipses, viz.—

April 5th.—*A Total Eclipse of the Sun*, invisible here. Begins at 8h. 44m. 54s. a.m., in long. 44° 39′ E., and lat. 58° 51′ S. Central Eclipse at noon, in long. 101° 28′ E., and lat. 57° 53′ S.; ending at 7h. 8m. 48s. a.m., in lat. 2° 42′ S., and long. 146° 17′ E. Visible in Australia, New Zealand, Java, Borneo, etc.

April 20th.—*A Partial Eclipse of the Moon*, invisible here. First contact with earth's shadow, 7h. 34m. 6s. a.m.; ecliptic opposition and middle of Eclipse at 9h. 13m. 36s. a.m.; last contact with shadow, 10h. 38m. 41s. a.m. Magnitude of Eclipse (Moon's diameter being 1) 0·706. Visible to America, the West Indies, Panama, Sandwich Islands, etc.

Sept. 29th.—*An Annular Eclipse of the Sun*, also invisible at Greenwich. Ecliptic conjunction at 3h. 47m. 42s. a.m. This Eclipse will be visible in the Northern regions, throughout Siberia and the North of Russia, Nova Zembla, Spitzbergen, and Behring's Straits.

Oct. 13th.—*A Partial Eclipse of the Moon*, visible in this country. First contact with earth's shadow, 9h. 21m. 6s. p.m.; ecliptic opposition at 10h. 59m. p.m.; last contact at 12h. 27m. 6s. p.m ; Eclipse central in long. 12° E. The Moon will south at Greenwich shortly after the middle of the Eclipse, which will be visible to nearly the whole of Europe. Magnitude of the Eclipse, ·994 (nearly total).

THE FOUR QUARTERS OF THE YEAR.

Spring Quarter	begins	March 20,	9h. 50m. a.m.
Summer	,,	,,	June 21,	6h. 37m. a.m.
Autumn	,,	,,	Sept. 22,	8h. 53m. p.m.
Winter	,,	,,	Dec. 21,	2h. 39m. p.m.

Fixed & Moveable Festivals, Anniversaries, &c.

Epiphany	Jan.	6
Septuagesima Sunday	,,	20
Martyrdom of King Charles I.	,,	30
Quinquagesima—Shrove Sunday	Feb.	3
Ash Wednesday	,,	6
Quadragesima—First Sunday in Lent	,,	10
St. David	March	1
Palm Sunday	,,	16
St. Patrick	,,	17
Good Friday	,,	21
EASTER SUNDAY	,,	23
Annunciation—Lady Day	,,	25
Low Sunday	,,	30
St. George	April	23
Rogation Sunday	,,	27
Ascension Day—Holy Thursday	May	1
Pentecost—Whit Sunday	,,	11
Trinity Sunday	,,	18
Corpus Christi	,,	22
Birth of Queen Victoria	,,	24
Restoration of King Charles II.	,,	29
Accession of Queen Victoria	June	20
Proclamation	,,	21
St. John the Baptist—Midsummer Day	,,	24
Birth of Prince Albert	Aug.	26
St. Michael—Michaelmas Day	Sept.	29
Gunpowder Plot	Nov.	5
Birth of Prince of Wales	,,	9
First Sunday in Advent—St. Andrew	,,	30
St. Thomas	Dec.	21
Christmas Day	,,	25

LAW TERMS, 1856.

Hilary	Begins	Jan. 11	Ends	Jan. 31
Easter	,,	April 15	,,	May 8
Trinity	,,	May 22	,,	June 12
Michaelmas	,,	Nov. 2	,,	Nov. 25

UNIVERSITY TERMS, 1856.

OXFORD.

Lent	Begins	Jan. 14	Ends	March 15
Easter	,,	April 2	,,	May 10
Trinity	,,	May 14	,,	July 5
Michaelmas	,,	Oct. 10	,,	Dec. 17

The Act, July 1.

CAMBRIDGE.

Lent	Begins	Jan. 13	Ends	March 14
Easter	,,	April 2	,,	July 4
Michaelmas	,,	Oct. 10	,,	Dec. 16

The Commencement, July 1.

ROYAL FAMILY OF GREAT BRITAIN.

May 24, 1819	Queen Victoria	37
Aug. 26, 1819	Prince Albert	37
Nov. 21, 1840	Princess Royal	16
Nov. 9, 1841	Prince of Wales	15
April 25, 1843	Princess Alice Maud Mary	13
Aug. 6, 1844	Prince Alfred Ernest Albert	12
May 25, 1846	Princess Helena Augusta Victoria	10
Mar. 18, 1848	Princess Louisa Caroline Alberta	8
May 1, 1850	Prince Arthur Patrick Albert	6
April 7, 1853	Prince Leopold George Albert	3
May 27, 1819	Geo. Fred. King of Hanover	37
Mar. 26, 1819	Geo. Wm. Fred. Ch. Dk. of Cambridge	37
July 19, 1822	Grand Duchess of Mecklenburgh	34
Nov. 27, 1833	Princess Mary of Cambridge	23
April 25, 1776	Princess Mary, Duchess of Gloucester	80
Aug. 17, 1786	Victoria Duchess of Kent	70
July 25, 1797	Augusta, Duchess of Cambridge	59

HOLIDAYS KEPT AT PUBLIC OFFICES.

Stamp Office.

March 21—Good Friday
May 24—Queen's Birthday
— 29—Restoration of King Charles II.
June 28—Coronation
Dec. 25—Christmas Day

India House, Transfer Office and Exchequer Office

March 21—Good Friday
Dec. 25—Christmas Day

Bank of England.

March 21—Good Friday
Dec. 25—Christmas Day
And in the Transfer Offices May 1 & Nov. 1 in addition

Custom House and Excise Office.

March 21—Good Friday
May 24—Queen's Birthday
June 28—Coronation
Dec. 25—Christmas Day

TRANSFER DAYS, DIVIDENDS DUE, &c.

	Divds. due.	Transfer Days.
BANK STOCK	Ap. 5, Oct. 10	Tuesday, Wed. Thurs. & Friday.
3 per Cent. Consols	Jan. 5, July 5	
3 per Cent. Reduced	Ap, 5, Oct. 10	
3 per Cent. 1726	Jan. 5, July 5	
New 3 per Cents.	Ap. 5, Oct. 10	
New 5 per Ct. Annuities	Jan. 5, July 5	
Long Annuities	Ap. 5, Oct. 10	
EAST INDIA STOCK	Jan. 6, July 6	Tu. Th. & Sat.
Interest on Indian Bonds	Ap. 1, Oct. 1.	
Life Annuities transferred between Jan. 5 & April 4, or between July 5 and Oct. 9		Payable Jan. 5, July 5
——— between April 5 & July 4, or between Oct. 10 and Jan. 4		Ap. 5, Oct. 10

These Dividends are payable three days later than the above dates.

January.

MOON'S QUARTERS.

7—New Moon ....8h. 17m. P.M.
14—First Quarter............8h. 42m. P.M.
22—Full Moon ....8h. 29m. A.M.
30—Last Quarter ....8h. 35m. A.M.

20—Sun enters AQUARIUS, 7h. 24m.
10—Moon in Perigee, 8h. A.M.
26—Moon in Apogee, 8h. A.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock before Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	Tu	*Circumcision*	8 9 r	0m47	3 37	38 2	23	1
2	W	*St. Macarius*	4 0 s	2 0	4 5	37 6	24	2
3	Th	Lavater died, 1801	8 8 r	3 16	4 32	36 9	25	3
4	F	Roger Ascham died, 1568	4 2 s	4 35	5 0	36 4	26	4
5	S	Mercury trine Uranus	8 8 r	5 56	5 29	36 2	27	5
6	**S**	EPIPHANY. *Twelfth Day*	4 5 s	7 14	5 54	35 8	28	6
7	M	*Plough Monday*	8 7 r	sets.	6 21	35 6	N	7
8	Tu	*St. Lucian*	4 7 s	4a20	6 47	35 5	1	8
9	W	Sun parallel Saturn	8 6 r	5 51	7 11	35 5	2	9
10	Th	Linnæus died, 1778	4 10 s	7 24	7 37	35 6	3	10
11	F	*Hilary Term begins*	8 5 r	8 54	8 1	35 7	4	11
12	S	Moon souths, 4h. 24m. 6s. P.M.	4 13 s	10 20	8 25	35 8	5	12
13	**S**	FIRST SUND. AF EPIPHANY. *Camb.*	8 4 r	11 44	8 49	35 7	6	13
14	M	*Oxford Term begins* [*Term begins*	4 16 s	morn.	9 12	36 2	7	14
15	Tu	Sirius rises, 6h. 22m. P.M.	8 2 r	1 8	9 32	36 6	8	15
16	W	Sun parallel Mercury	4 19 s	2 32	9 54	37 0	9	16
17	Th	B. Franklin born, 1706	8 0 r	3 55	10 14	37 3	10	17
18	F	*Old Twelfth Day*	4 22 s	5 15	10 33	37 5	11	18
19	S	Sun parallel Venus	7 58 r	6 27	10 53	37 5	12	19
20	**S**	SEPTUAGESIMA SUNDAY	4 25 s	7 24	11 10	37 5	13	20
21	M	*St. Agnes*	7 56 r	8 8	11 29	37 6	14	21
22	Tu	*St. Vincent*	4 29 s	rises.	11 45	37 5	15	22
23	W	William Pitt died, 1805	7 54 r	5a52	12 2	37 5	16	23
24	Th	Day-break, 5h. 54m.	4 32 s	7 4	12 16	37 5	17	24
25	F	*Conversion of St. Paul*	7 51 r	8 15	12 30	37 2	18	25
26	S	*St. Polycarp*	4 36 s	9 23	12 44	37 2	19	26
27	**S**	SEXAGESIMA SUNDAY	7 49 r	10 32	12 56	36 9	20	27
28	M	Peter the Great died, 1725	4 39 s	11 43	13 9	36 7	21	28
29	Tu	Saturn souths, 9h. 0m. P.M.	7 46 r	morn.	13 20	36 3	22	29
30	W	Moon souths, 5h. 48m. A.M.	4 43 s	0 56	13 31	35 9	23	30
31	Th	*Hilary Term ends*	7 43 r	2 11	13 41	34 5	24	31

ASTRO-METEOROLOGICAL PREDICTIONS.

The planetary positions foreshow a very severe winterly month, with extensive falls of snow. 1st, The year opens with wind and rain—2nd, Finer, and more moderate—3rd, Small rain—4th, Showers, windy—5th, Changeable, gales—6th, Fog or rain—7th, Rain—8th Temperature going down, chiefly fine—9th, Cold and winterly, snow or fog—10th, Downfall, light wind—11th, Finer—12th, Seasonable—13th, High wind, rain or snow—14th, Finer—15th, Cold, windy—16th, Wind continues—17th, Seasonable—18th, Dull, some rain—19th, Dull, much snow or rain—20th, Small rain or fog—21st, Cloudy—22nd to 24th, High wind, occasional showers of rain or sleet—25th Dull and cloudy, with fine intervals—26th, Snow storms prevail, or extensive fog—7th, Windy, more downfall—28th, A change, finer—29th, Temperature falls, snow—30th, Fair—31st, Cloudy for snow or sleet, wind.

February.

MOON'S QUARTERS.

6—New Moon ....10h. 35m. A.M.
13—First Quarter .... 2h. 12m. A.M.
20—Full Moon .... 9h. 40m. P.M.
29—Last Quarter........... 1h. 41m. A.M.

19—Sun enters PISCES, 9h. 59m. A.M.
7—Moon in Perigee, 1h. P.M.
22—Moon in Apogee, 7h. P.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock before Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	F	Pheasant-shooting ends	7 42 r	3 31	13 52	35 3	25	32
2	S	*Purification. Candlemas*	4 48 s	4 50	13 59	34 7	26	33
3	**S**	SHROVE SUNDAY	7 38 r	6 2	14 3	34 3	27	34
4	M	Blair died, 1746	4 52 s	7 0	14 11	34 0	28	35
5	Tu	*Shrove Tuesday*	7 35 r	7 42	14 16	33 6	29	36
6	W	*Ash Wednesday* [P.M	4 55 s	sets.	14 22	33 3	N	37
7	Th	Moon conjunction Jupiter, 9h. 40m	7 32 r	6a23	14 26	32 5	1	38
8	F	Mary Queen of Scots bhd., 1587	4 59 s	7 56	14 29	32 6	2	39
9	S	Sun trine Mars	7 28 r	9 25	14 31	33 0	3	40
10	**S**	FIRST SUNDAY IN LENT	5 3 s	10 52	14 32	33 3	4	41
11	M	Washington born, 1723	7 25 r	morn.	14 32	34 0	5	42
12	Tu	*Cambridge Term divides*	5 6 s	0 18	14 31	34 9	6	43
13	W	*Ember Week*	7 21 r	1 43	14 31	35 9	7	44
14	Th	*St. Valentine. Old Cand. Day.*	5 10 s	3 5	14 30	36 9	8	45
15	F	Venus trine Uranus	7 17 r	4 20	14 28	37 8	9	46
16	S	Cardinal Bellay died, 1560	5 14 s	5 22	14 25	38 4	10	47
17	**S**	SECOND SUNDAY IN LENT	7 13 r	6 9	14 21	39 0	11	48
18	M	Charles Lamb (poet) born, 1775	5 17 s	6 44	14 16	39 3	12	49
19	Tu	Copernicus born, 1473	7 9 r	7 8	14 10	39 5	13	50
20	W	David Garrick born, 1716	5 21 s	rises.	14 5	39 6	14	51
21	Th	*St. Verda*	7 5 r	6 a 3	13 59	39 6	15	52
22	F	Sun parallel Mercury	5 25 s	7 13	13 51	39 7	16	53
23	S	Day 10h. 24m. long	7 1 r	8 22	13 42	39 8	17	54
24	**S**	THIRD SUNDAY IN LENT	5 28 s	9 33	13 34	39 9	18	55
25	M	Sir Christopher Wren died, 1723	6 57 r	10 43	13 24	40 1	19	56
26	Tu	Twilight ends 7h. 23m.	5 32 s	11 56	13 15	39 7	20	57
27	W	Hare-hunting ends	6 53 r	morn.	13 4	38 2	21	58
28	Th	Montaigne born, 1533	5 35 s	1 14	12 56	39 5	22	59
29	F	*St. Oswald*	5 50 s	2 30	12 43	39 5	23	60

ASTRO-METEOROLOGICAL PREDICTIONS.

A month in which much downfall may be expected; damp prevails. Finest days about the 7th, 8th, and 9th. Tides high on the 6th. 1st and 2nd, Dull and cold, with small rain or sleet—3rd, Temperature low, some downfall—4th, Finer, some wind—6th, Cloudy, light wind—6th, Cold and frosty—7th, Temperature going up, chiefly fine, some wind—8th and 9th, Fine and mild—10th, Temperature falls again—11th, Cold and cloudy—12th, Downfall, fog, very cold—13th, Cold and dull—14th, Showers, changeable—15th, Fog prevails—16th, Chiefly fine, wind—17th, High wind, downfall—18th, Dull—19th, Cloudy for rain—20th, Small rain or fog—21st, Some rain—22nd, Stormy, winterly weather, with rain or sleet—23rd, Cold, and dull—24th, Finer—25th, Dull, small rain—26th, Temperature rises, light wind—27th, Chiefly fine—28th, Showers—29th, Fine, wind.

March.

MOON'S QUARTERS.

6—New Moon ....8h. 30m. P.M.
13—First Quarter ....2h. 36m. P.M.
21—Full Moon ....4h. 4m. P.M.
29—Last Quarter ....2h. 31m. P.M.

20—Sun enters ARIES, 9h. 49m. A.M.
7—Moon in Perigee, 1h. A.M.
20—Moon in Apogee, 8h. P.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock before Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	S	*St. David*	6 48 r	3m44	12 31	39 4	24	61
2	**S**	FOURTH SUNDAY IN LENT	5 39 s	4 49	12 19	39 3	25	62
3	M	Mars rises, 9h. P.M.	6 44 r	5 36	12 7	39 2	26	63
4	Tu	Dr. Arne died, 1778	5 42 s	6 10	11 52	39 0	27	64
5	W	Sun conjunction Jupiter	6 40 r	6 34	11 38	38 8	28	65
6	Th	Day 11h. 10m. long	5 46 s	sets.	11 24	38 8	N	66
7	F	*St. Perpetua*	6 35 r	6a53	11 10	38 8	1	67
8	S	Sun sextile Uranus	5 49 s	8 22	10 55	39 1	2	68
9	**S**	FIFTH SUNDAY IN LENT	6 31 r	9 53	10 39	39 5	3	69
10	M	Sir Hugh Myddelton died, 1589	5 53 s	11 23	10 24	40 0	4	70
11	Tu	Tasso born, 1544	6 26 r	morn.	10 10	40 5	5	71
12	W	*St. Gregory*	5 56 s	0 51	9 54	41 1	6	72
13	Th	Sun square Saturn	6 22 r	2 10	9 36	41 5	7	73
14	F	*Cambridge Term ends*	6 0 s	3 18	9 19	42 0	8	74
15	S	*Oxford Term ends*	6 17 r	4 10	9 2	42 3	9	75
16	**S**	PALM SUNDAY	6 3 s	4 49	8 44	42 6	10	76
17	M	*St. Patrick*	6 13 r	5 15	8 27	42 8	11	77
18	Tu	*St. Edmund*, King of West Saxons	6 7 s	5 34	8 9	43 1	12	78
19	W	Mars rises, 7h. 37m. P.M.	6 8 r	5 49	7 51	43 3	13	79
20	Th	*Maunday Thursday*	6 10 s	6 0	7 32	43 5	14	80
21	F	*Good Friday*	6 4 r	rises.	7 14	43 6	15	81
22	S	Goëthe died, 1832	6 13 s	7a22	6 55	43 7	16	82
23	**S**	EASTER SUNDAY	5 59 r	8 32	6 37	43 9	17	83
24	M	*Easter Monday*	6 17 s	9 45	6 18	44 1	18	84
25	Tu	*Easter Tuesday. Lady-day*	5 54 r	11 2	5 59	44 3	19	85
26	W	Saturn souths, 5h. 18m. P.M.	6 20 s	morn.	5 41	44 5	20	86
27	Th	Sun semisextile Venus	5 50 r	0 18	5 22	44 6	21	87
28	F	Day-break, 3h. 46m.	6 23 s	1 33	5 4	44 8	22	88
29	S	Moon souths, 5h. 52m. A.M.	5 45 r	2 39	4 45	44 9	23	89
30	**S**	LOW SUNDAY	6 27 s	3 31	4 28	45 0	24	90
31	M	Beethoven died, 1827	5 41 r	4 9	4 10	45 1	25	91

ASTRO-METEOROLOGICAL PREDICTIONS.

A cold and wet month, but fine and warm on the 5th, 6th, and 7th days. 1st, Chiefly fine—2nd, Fine, mild—3rd, Dull, small rain—4th, Passing showers—5th to 7th, Fine and warm for the season, some wind—8th, Temperature falls, dull, small rain—9th, Cloudy, light wind—10th, unsettled, wind p.m.—11th, Dull, rain or fog—12th, Seasonable—13th, Cloudy, cold and wet—14th, Cloudy—15th, Finer—16th to 18th, Rain, dull—19th, Showers—20th, Chiefly fine till the 23rd, cold and dull—24th, Finer—25th, Chiefly fine, some wind—26th, Cloudy, small rain—27th, Showers—28th, Cloudy—29th and 30th, Chiefly fine—31st, Seasonable, some wind.

April.

MOON'S QUARTERS.

5—New Moon .... 5h. 53m. A.M.
12—First Quarter .... 4h. 52m. A.M.
20—Full Moon .... 9h. 14m. A.M.
27—Last Quarter............11h. 26m. P.M.

19—Sun enters Taurus, 9h. 55m. P.M.
4—Moon in Perigee, 0h. P.M.
17—Moon in Apogee, 3h. A.M.

Day of M.	Day of W.	Anniversaries and Festivals. ●	Sun rises & sets	Moon rises & sets.	Clock before Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	h. m.	m. s.	°		
1	Tu	*All Fool's Day*	5 37 r	4 37	4 0	45 1	26	92
2	W	*Oxford & Cambridge Terms begin*	6 34 s	4 55	3 42	45 1	27	93
3	Th	Bishop Heber died, 1826	5 33 r	5 11	3 24	45 1	28	94
4	F	*St. Ambrose*	6 37 s	5 26	3 6	45 2	29	95
5	S	Sun eclipsed, invisible	5 28 r	sets.	2 48	45 2	N	96
6	**S**	SECOND SUNDAY AFTER EASTER	6 40 s	8a50	2 31	45 1	1	97
7	M	Sir Francis Chantrey born, 1781	5 24 r	10 21	2 13	44 9	2	98
8	Tu	J. C. Loudon born, 1783	6 44 s	11 49	1 56	44 7	3	99
9	W	Lord Bacon died, 1626	5 19 r	morn.	1 39	44 5	4	100
10	Th	Venus conjunction Jupiter	6 47 s	1 4	1 22	44 3	5	101
11	F	George Canning born, 1770	5 15 r	2 6	1 6	44 2	6	102
12	S	Moon souths, 7h. 37m. P.M.	6 51 s	2 50	0 50	44 2	7	103
13	**S**	THIRD SUNDAY AFTER EASTER	5 11 r	3 19	0 34	44 5	8	104
14	M	Mercury parallel Jupiter	6 54 s	3 42	0 18	44 7	9	105
15	Tu	*Easter Term begins*	5 6 r	3 58	0 3	45 2	10	106
16	W	James Bruce died, 1794	6 57 s	4 9	after.	45 6	11	107
17	Th	Day-break, 3h. 49m.	5 2 r	4 20	0 26	46 0	12	108
18	F	Jupiter square Saturn	7 1 s	4 30	0 40	46 4	13	109
19	S	*St. Alphage*	4 58 r	4 40	0 54	46 6	14	110
20	**S**	FOURTH SUNDAY AFTER EASTER	7 4 s	rises.	1 7	47 4	15	111
21	M	David Mallet (poet) died, 1765	4 54 r	8a49	1 20	47 9	16	112
22	Tu	Fielding born, 1707	7 7 s	10 7	1 32	48 6	17	113
23	W	*St George.* Shakespeare b. 1564	4 49 r	11 23	1 44	48 7	18	114
24	Th	Mercury sets, 7h. 9m. P.M.	7 11 s	morn.	1 56	49 3	19	115
25	F	*St. Mark.* Cowper died, 1800	4 45 r	0 33	2 7	49 6	20	116
26	S	Sun conjunction Mercury	7 14 s	1 29	2 17	50 0	21	117
27	**S**	ROGATION SUNDAY	4 41 r	2 11	2 27	50 4	22	118
28	M	Day increased 6h. 50m.	7 17 s	2 39	2 36	50 9	23	119
29	Tu	Mercury semi-square Saturn	4 37 r	3 1	2 45	51 3	24	120
30	W	Moon conjunction Jupiter	7 21 s	3 17	2 54	51 8	25	121

ASTRO-METEOROLOGICAL PREDICTIONS.

A windy and unsettled month, especially about the 3rd, 18th, and 26th days. 1st, Chiefly fine—2nd, Showers of hail or rain, warm—3rd, Stormy, probably thunder showers—4th, Wind and rain—5th, Cloudy, rain at the eclipse—6th and 7th, Showers—8th Cool, windy—9th, Seasonable—10th, Small rain, fine intervals—11th and 12th, Fine—13th, Showers, wind—14th, Finer, warm—15th, Temperature falls, wet—16th, Dull, light wind—17th, Chiefly fine—18th, Stormy air, rain—19th, Showers—20th, Small rain—21st, Windy, threatening—22nd, Chiefly fine—23rd, Fine and pleasant—24th, Seasonable—25th, Warm—26th and 27th, Windy, showers—28th, Cloudy—29th, Windy—30th, Fine.

May.

MOON'S QUARTERS.

4—New Moon……………2h. 42m. P.M.
11—First Quarter ……… 8h. 45m. P.M.
19—Full Moon……………11h. 56m. P.M.
27—Last Quarter………… 5h. 33m. A.M.

20—Sun enters GEMINI, 10h. 2m. P.M.
2—Moon in Perigee, 7h. P.M.
14—Moon in Apogee, 6h. P.M.
30—Moon in Perigee, 0h. P.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock after Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	h. m.	m. s.	°		
1	Th	*Ascension. Holy Thursday*	4 33 r	3 30	3 1	52 2	26	122
2	F	Sun semisquare Saturn	7 23 s	3 43	3 9	52 4	27	123
3	S	*Invention of the Holy Cross*	4 30 r	3 58	3 16	52 5	28	124
4	**S**	SUNDAY AFTER ASCENSION	7 25 s	sets.	3 22	52 4	N	125
5	M	Moon conjunction Mercury	4 26 r	9a15	3 28	52 0	1	126
6	Tu	*St. John the Evangelist*	7 27 s	10 41	3 33	51 6	2	127
7	W	Day-break, 1h. 40m.	4 23 r	11 51	3 37	51 7	3	128
8	Th	*Easter Term ends*	7 32 s	morn.	3 42	52 0	4	129
9	F	Venus trine Mars	4 19 r	0 44	3 45	52 2	5	130
10	S	*Oxford Term ends*	7 35 s	1 20	3 48	52 4	6	131
11	**S**	WHIT SUNDAY	4 16 r	1 45	3 51	52 6	7	132
12	M	*Whit Monday*	7 38 s	2 3	3 52	52 6	8	133
13	Tu	*Whit Tuesday*	4 13 r	2 17	3 54	52 6	9	134
14	W	*Ember Week. Oxford Term begins*	7 41 s	2 29	3 54	52 6	10	135
15	Th	Moon conjunction Mars	4 9 r	2 39	3 54	52 5	11	136
16	F	Battle of Albuera, 1811	7 44 s	2 49	3 54	52 4	12	137
17	S	Mars parallel Jupiter	4 7 r	2 58	3 53	52 0	13	138
18	**S**	TRINITY SUNDAY	7 46 s	3 11	3 51	51 8	14	139
19	M	*St. Dunstan*	4 4 r	rises.	3 49	52 1	15	140
20	Tu	Albert Durer born, 1471	7 50 s	9a10	3 46	52 8	16	141
21	W	Day 15h. 15m. long	4 2 r	10 23	3 43	53 7	17	142
22	Th	*Corpus Christi. Trinity Term begins*	7 53 s	11 25	3 39	55 3	18	143
23	F	Lord Rodney died, 1792	3 59 r	morn.	3 34	55 8	19	144
24	S	Queen Victoria born, 1819	7 56 s	0 11	3 29	56 2	20	145
25	**S**	FIRST SUNDAY AFTER TRINITY	3 57 r	0 43	3 24	56 5	21	146
26	M	*St. Augustine*	7 58 s	1 7	3 18	56 6	22	147
27	Tu	Dante born, 1265	3 54 r	1 24	3 11	56 9	23	148
28	W	Thomas Moore born, 1780	8 0 s	1 38	3 4	57 4	24	149
29	Th	Sir H. Davy died, 1829	3 52 r	1 51	2 57	57 9	25	150
30	F	Alexander Pope died, 1744	8 2 s	2 4	2 49	58 4	26	151
31	S	Jupiter souths, 7h. 41m. A.M.	3 50 r	2 19	2 41	58 5	27	152

ASTRO-METEOROLOGICAL PREDICTIONS.

The fourth week will be very fine, with high temperature. 1st, Cloudy, showers—2nd and 3rd, Rain and wind—4th and 5th, Fine and warm—6th, Wind, passing showers—7th, Small rain, p.m.—8th, Fine—9th, Cloudy for rain—10th, Cooler, yet fine—11th, Cold and cloudy—12th to 14th, Seasonable—15th, Warm—16th, Light wind—17th, Fine and seasonable—18th, Cloudy—19th, Cooler, rain—20th, Chiefly fine—21st, Dull, small rain—22nd, Fair—23rd and 24th, Fine and warm—25th and 26th, Cloudy—27th, Small rain—28th, Windy, showers—20th, Fine—30th, Overcast—31st, Seasonable.

June.

MOON'S QUARTERS.

2—New Moon ....11h. 40m. P.M.
10—First Quarter.......... 1h. 50m. P.M.
18—Full Moon ....11h. 52m. A.M.
25—Last Quarter ....10h. 17m. A.M.

21—Sun enters CANCER, 6h. 37m. A.M.
11—Moon in Apogee, 0h. P.M.
25—Moon in Perigee, 7h. A.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock after Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	**S**	SECOND SUNDAY AFTER TRINITY	3 50 r	2m37	2 32	58 8	28	153
2	M	Night 7h. 48m. long	8 6 s	sets.	2 23	59 4	N	154
3	Tu	William Harvey died, 1657	3 49 r	9a30	2 13	59 5	1	155
4	W	Moon conjunction Saturn	8 8 s	10 32	2 3	59 3	2	156
5	Th	George Loddiges died, 1846	3 47 r	11 16	1 54	59 1	3	157
6	F	Sun parallel Saturn	8 10 s	11 45	1 43	58 9	4	158
7	S	Venus sextile Jupiter	3 49 r	morn.	1 32	58 7	5	159
8	**S**	THIRD SUNDAY AFTER TRINITY	8 11 s	0 7	1 21	58 6	6	160
9	M	William Lilly died, 1681	3 45 r	0 23	1 10	58 7	7	161
10	Tu	Saturn sets, 9h. 1m. P.M.	8 12 s	0 36	0 58	59 0	8	162
11	W	*St. Barnabas*	3 45 r	0 46	0 46	59 7	9	163
12	Th	*Trinity Term ends*	8 13 s	0 56	0 34	60 7	10	164
13	F	Madame D'Arblay born, 1752	3 44 r	1 6	0 22	61 0	11	165
14	S	Thomas Pennant born, 1726	8 14 s	1 17	0 10	61 1	12	166
15	**S**	FOURTH SUNDAY AFTER TRINITY	3 44 r	1 31	before.	61 1	13	167
16	M	Moon souths, 10h. 37m. P.M.	8 15 s	1 49	0 16	61 2	14	168
17	Tu	*St. Alban.* John Wesley b. 1703	3 44 r	2 15	0 28	61 2	15	169
18	W	Venus parallel Saturn	8 15 s	rises.	0 41	61 0	16	170
19	Th	Pascal born, 1623	3 44 r	10 a 9	0 54	62 8	17	171
20	F	Accession of Queen Victoria	8 15 s	10 45	1 7	60 7	18	172
21	S	Sun conjunction Mercury	3 45 r	11 11	1 20	60 5	19	173
22	**S**	FIFTH SUNDAY AFTER TRINITY	8 14 s	11 31	1 34	60 5	20	174
23	M	Mark Akenside (poet) died, 1770	3 45 r	11 46	1 47	60 4	21	175
24	Tu	*St. John Baptist. Midsummer Day*	8 13 s	11 59	2 0	60 3	22	176
25	W	Sun conjunction Saturn	3 46 r	morn.	2 12	60 2	23	177
26	Th	Saturn souths, noon	8 13 s	0 11	2 25	60 0	24	178
27	F	Moon souths, 7h. 30m. A.M.	3 47 r	0 24	2 38	59 7	25	179
28	S	Queen Victoria crowned	8 12 s	0 40	2 50	59 5	26	180
29	**S**	SIXTH SUNDAY AFTER TRINITY	3 47 r	1 1	3 3	59 6	27	181
30	M	Sun semisquare Uranus	8 11 s	1 29	3 15	59 7	28	182

ASTRO-METEOROLOGICAL PREDICTIONS.

Somewhat below the average temperature, until the end. 1st, Cloudy—2nd and 3rd, Fine—4th, Showers, dull—5th, Cloudy—6th, Cooler, rain—7th, Fine, some wind—8th, Showers, wind—9th, Small rain—10th and 11th, Chiefly fine—12th, Showers—13th, Cooler, cloudy—14th, Fine—15th, Cloudy—16th, Light wind, fine—17th, Rain, wind —18th, Showers, dull—19th, Fine—20th, Threatening—21st, Windy, cloudy for rain—22nd, Changeable, cooler—23rd, Chiefly fine—24th and 25th, Rain or hail, thunderstorms prevail—26th, Showers—27th and 28th, Finer—29th, Heat, very fine—30th, Cooler, cloudy.

July.

MOON'S QUARTERS.

2—New Moon ....9h. 30m. A.M.
10—First Quarter..............7h. 22m. A.M.
17—Full Moon ....9h. 30m. P.M.
24—Last Quarter ....3h. 1m. P.M.
31—New Moon ....9h. 8m. P.M.

22—Sun enters LEO, 5h. 35m. P.M.
9—Moon in Apogee, 6h. A.M.
21—Moon in Perigee, 6h. A.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock before Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	h. m.	m. s.	°		
1	Tu	Venus conjunction Saturn	3 49 r	2m10	3 26	60 7	29	183
2	W	*Vis. Blessed Virgin Mary*	8 11 s	sets.	3 38	61 3	N	184
3	Th	Dog-days begin	3 50 r	9a45	3 49	60 6	1	185
4	F	*Transfiguration of St. Martin*	8 10 s	10 10	4 0	61 8	2	186
5	S	*Oxford Term ends*	3 51 r	10 27	4 11	61 9	3	187
6	**S**	SEVENTH SUNDAY AFTER TRINITY	8 9 s	10 41	4 21	61 8	4	188
7	M	*Thomas à Becket assassinated*, 1170	3 53 r	10 52	4 31	61 4	5	189
8	Tu	Moon square Mercury	8 8 s	11 3	4 40	60 9	6	190
9	W	Edmund Burke died, 1797	3 55 r	11 12	4 50	60 6	7	191
10	Th	John Calvin born, 1509	8 7 s	11 23	4 58	60 7	8	192
11	F	Moon souths, 6h. 53m. P.M.	3 57 r	11 36	5 7	61 0	9	193
12	S	Erasmus died, 1536	8 6 s	11 51	5 14	61 3	10	194
13	**S**	EIGHTH SUNDAY AFTER TRINITY	3 59 r	morn.	5 21	61 6	11	195
14	M	Venus parallel Saturn	8 5 s	0 13	5 29	61 8	12	196
15	Tu	*St. Swithin*	4 1 r	0 45	5 35	61 8	13	197
16	W	Sun sextile Uranus	8 5 s	1 30	5 41	61 5	14	198
17	Th	Dr. Isaac Watts born, 1674	4 3 r	rises.	5 47	61 0	15	199
18	F	Mercury conjunction Saturn	8 4 s	9a14	5 52	60 7	16	200
19	S	Day 16h. 10m. long	4 6 r	9 35	5 56	60 5	17	201
20	**S**	NINTH SUNDAY AFTER TRINITY	8 3 s	9 52	6 0	60 3	18	202
21	M	Moon souths, 3h. 1m. A M.	4 8 r	10 6	6 4	60 3	19	203
22	Tu	*St. Mary Magdalene*	8 1 s	10 18	6 7	60 4	20	204
23	W	Moon conjunction Jupiter	4 11 r	10 32	6 9	60 6	21	205
24	Th	John Dyer (poet) died, 1758	7 59 s	10 46	6 11	60 9	22	206
25	F	*St. James*	4 14 r	11 6	6 12	61 3	23	207
26	S	*St. Ann.* Dr. Doddridge b. 1702	7 56 s	11 31	6 12	61 5	24	208
27	**S**	TENTH SUNDAY AFTER TRINITY	4 17 r	morn.	6 12	61 7	25	209
28	M	Moon conjunction Saturn	7 52 s	0 6	6 12	61 7	26	210
29	Tu	Wilberforce died, 1833	4 20 r	0 55	6 11	61 7	27	211
30	W	Mars souths, 5h. 15m. P.M.	7 49 s	1 59	6 9	61 6	28	212
31	Th	Moon conjunction Mercury	4 23 r	sets.	6 6	61 5	N	213

ASTRO-METEOROLOGICAL PREDICTIONS.

Expect an excess of rain this month, with heavy thunder-storms about the middle. 1st, Small rain, dull—2nd, Cloudy—3rd, Chiefly fine, light wind—4th, Fine and warm—5th, Cooler, cloudy, showers—6th, Rain, cool—7th to 11th, Fine and seasonable weather—12th, Hot, thunder-storms prevail—13th, Seasonable—14th, Changeable, some rain—15th, Cloudy—16th, Cooler, wind—17th, Showers, cloudy—18th, Rain and wind—19th, Showers—20th, Dashing rains—21st to 24th, Finer—25th, Cloudy, light wind—26th, Chiefly fine—27th and 28th, Fine—29th, Cooler—30th, Light wind—31st, Cool and cloudy, showers.

August.

MOON'S QUARTERS.

9—First Quarter .... 0h. 22m. A.M.
16—Full Moon .... 5h. 55m. A.M.
22—Last Quarter........... 9h. 7m. P.M.
30—New Moon ....11h. 14m. A.M.

22—Sun enters VIRGO, 12h. P.M.
6—Moon in Apogee, 0h. A.M.
18—Moon in Perigee, 1h. A.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock before Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	F	*Lammas Day*	4 25 r	8m33	6 3	61 2	1	214
2	S	Arkwright died, 1792	7 45 s	8 48	6 0	61 2	2	215
3	**S**	ELEVENTH SUNDAY AFTER TRINITY	4 28 r	8 59	5 55	61 3	3	216
4	M	Shelley born, 1792	7 42 s	9 10	5 50	61 3	4	217
5	Tu	Fenelon born, 1651	4 31 r	9 20	5 45	61 6	5	218
6	W	*Transfiguration*	7 38 s	9 29	5 38	61 7	6	219
7	Th	*Name of Jesus*	4 35 r	9 41	5 32	61 7	7	220
8	F	Ben Jonson died, 1637	7 35 s	9 55	5 24	61 6	8	221
9	S	Sun conjunction Mercury	4 37 r	10 13	5 16	61 4	9	222
10	**S**	TWELFTH SUNDAY AFTER TRINITY	7 31 s	10 38	5 8	61 2	10	223
11	M	Dog-days end	4 40 r	11 17	4 59	61 1	11	224
12	Tu	Robert Southey born, 1774	7 27 s	morn.	4 49	61 1	12	225
13	W	*Old Lammas Day*	4 44 r	0 14	4 39	61 2	13	226
14	Th	Sun parallel Mercury	7 23 s	1 27	4 28	61 3	14	227
15	F	*Assumption Blessed Virgin Mary*	4 47 r	2 55	4 17	61 5	15	228
16	S	Andrew Marvel died, 1678	7 19 s	rises.	4 5	61 7	16	229
17	**S**	THIRTEENTH SUNDAY AF. TRINITY	4 50 r	8a11	3 53	61 8	17	230
18	M	Moon souths, 1h. 42m. A.M.	7 15 s	8 25	3 40	61 7	18	231
19	Tu	Moon conjunction Jupiter	4 53 r	8 38	3 27	61 6	19	232
20	W	*St. Bernard*	7 11 s	8 53	3 13	61 2	20	233
21	Th	Grouse-shooting begins	4 57 r	9 11	2 59	60 5	21	234
22	F	Lord Lyttelton died, 1773	7 7 s	9 33	2 44	59 7	22	235
23	S	Alexander Wilson died, 1813	5 0 r	10 5	2 29	59 5	23	236
24	**S**	FOURTEENTH SUNDAY AF. TRINITY	7 3 s	10 49	2 14	59 8	24	237
25	M	Thomas Chatterton died, 1770	5 3 r	11 49	1 58	60 2	25	238
26	Tu	Prince Albert born, 1819	6 59 s	morn.	1 44	60 3	26	239
27	W	Thomson (poet) died, 1748	5 6 r	0 59	1 25	60 5	27	240
28	Th	*St. Augustine*	6 54 s	2 16	1 8	60 6	28	241
29	F	*St. John the Baptist*	5 9 r	3 33	0 50	60 6	29	242
30	S	Mercury trine Uranus	6 50 s	sets.	0 32	60 5	N	243
31	**S**	FIFTEENTH SUNDAY AFT. TRINITY	5 12 r	7a18	0 14	60 2	1	244

ASTRO-METEOROLOGICAL PREDICTIONS.

Look for falling stars and other meteors on the nights of the 10th to the 13th. Thunder-storms frequent. 1st, Warm, with thunder and hail—2nd, Fine and warm—3rd and 4th, Fair, but cloudy—5th, Thunder-showers—6th, Cloudy—7th, Thunder-storms, hail or rain—8th, Threatening, windy—9th, Showers—10th, Fine—11th, Cloudy and dull, small rain—12th and 13th, Thunder and hailstorms, latter day cooler—14th, Cloudy, showers—15th and 16th, Seasonable—17th, Severe thunder-storms, damage by hail and lightning—18th, Cooler, rain—19th and 20th, Fine—21st, Showers, wind—22nd, Fine and warm—23rd, Warm, thunder, hail or rain—24th, Small rain—25th and 26th, Chiefly fine—27th, Warm—28th and 29th, Seasonable—30th, Fine, some wind—31st, Showers of hail or rain.

September.

MOON'S QUARTERS.

7—First Quarter ....3h. 57m. P.M.
14—Full Moon ....2h. 8m. P.M.
21—Last Quarter ....5h. 48m. A.M.
29—New Moon ....3h. 48m. A M.

22—Sun enters LIBRA, 8h. 53m. P.M.
2—Moon in Apogee, 3h. P.M.
15—Moon in Perigee, 8h. A.M.
29—Moon in Apogee, 11h. P.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock after Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	M	*St. Giles.* Partridge-shooting beg.	5 14 r	7m27	0 5	59 7	2	245
2	Tu	London burnt, 1666 o.s.	6 44 s	7 37	0 24	59 4	3	246
3	W	Day-break, 3h. 12m.	5 17 r	7 47	0 43	58 8	4	247
4	Th	Sun sextile Saturn	6 40 s	8 0	1 2	58 5	5	248
5	F	Dr. Patrick Neill died, 1851	5 21 r	8 15	1 23	58 5	6	249
6	S	Moon souths, 4h. 58m. P.M.	6 35 s	8 38	1 42	58 5	7	250
7	**S**	SIXTEENTH SUNDAY AFT. TRINITY	5 24 r	9 10	2 2	58 7	8	251
8	M	*Nativity of Blessed Virgin Mary*	6 30 s	9 56	2 23	59 2	9	252
9	Tu	Sir H. Gilbert perished at sea, 1583	5 27 r	11 1	2 43	59 5	10	253
10	W	Sun parallel Mercury	6 25 s	morn.	3 4	59 7	11	254
11	Th	Thomson (poet) born, 1700	5 31 r	0 22	3 5	59 9	12	255
12	F	Venus parallel Jupiter	6 21 s	1 51	3 45	59 9	13	256
13	S	Charles James Fox died, 1806	5 33 r	3 25	4 8	59 7	14	257
14	**S**	SEVENTEENTH SUNDAY AF. TRINITY	6 16 s	rises.	4 27	59 7	15	258
15	M	Moon conjunction Jupiter	5 37 r	6a43	4 49	59 7	16	259
16	Tu	Twilight ends, 8h. 11m.	6 11 s	6 57	5 10	58 2	17	260
17	W	*Ember Week*	5 40 r	7 13	5 31	58 3	18	261
18	Th	Dr. Johnson born, 1709	6 7 s	7 35	5 52	57 6	19	262
19	F	Venus square Saturn	5 43 r	8 2	6 13	56 8	20	263
20	S	Battle of Alma, 1854	6 2 s	8 46	6 34	56 2	21	264
21	**S**	EIGHTEENTH SUNDAY AF. TRINITY	5 46 r	9 41	6 55	55 4	22	265
22	M	Autumn commences	5 57 s	10 49	7 26	54 8	23	266
23	Tu	Mars trine Jupiter	5 49 r	morn.	7 42	54 3	24	267
24	W	Jupiter souths, midnight	5 53 s	0 5	8 2	53 8	25	268
25	Th	A. G. Werner born, 1750	5 53 r	1 21	8 23	52 8	26	269
26	F	*St. Cyprian*	5 48 s	2 36	8 43	52 8	27	270
27	S	Sun opposition Jupiter	5 56 r	3 50	9 4	52 3	28	271
28	**S**	NINETEENTH SUNDAY AF. TRINITY	5 44 s	4 59	9 23	52 3	29	272
29	M	*Michaelmas Day.* Sun eclipsed,	5 59 r	sets.	9 43	52 5	N	273
30	Tu	*St. Jerome* [invisible	5 40 s	5a57	10 3	53 0	1	274

ASTRO-METEOROLOGICAL PREDICTIONS.

The first half of this month will be cool and wet, the latter fine and drier. 1st, Light wind—2nd, Cloudy—3rd, Dull, small rain—4th, Temperature falls, rain or fog—5th, Chiefly fine, warmer—6th, Rain—7th, Windy, fair—8th, Very fine—9th, Turbulent air, hail or rain—10th, Windy—11th, Wind and rain—12th, Fine and warm—13th to 15th, Chiefly fine—16th, Rain and wind—17th and 18th, Cold and cloudy—19th, Dull, small rain or fog—20th, Cloudy—21st, Fine and warm—22nd, Threatening, chiefly fine and warm—23rd, Warm, hail or rain—24th, Unsettled—25th, Small rain—26th, Fine—27th, Fine and warm for the season—28th, Cooler, dull—29th, Fair—30th, Cloudy.

October.

MOON'S QUARTERS.

7—First Quarter .... 5h. 36m. A.M.
13—Full Moon ....10h. 59m. P.M.
20—Last Quarter............6h. 6m. P.M.
28—New Moon .... 9h. 54m P.M.

23—Sun enters Scorpio, 5h. 11m. A.M.
13—Moon in Perigee, 7h. P.M.
27—Moon in Apogeo, 1h. A.M.

Day of M.	Day of W.	Anniversaries and Festivals.	Sun rises & sets.	Moon rises & sets.	Clock after Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	h. m.	m. s.	°		
1	W	*St. Remigius*	6 2 r	6 a 9	10 17	53 6	2	275
2	Th	Moon souths, 2h. 8m. P.M.	5 36 s	6 23	10 40	53 7	3	276
3	F	Robert Barclay died, 1790	6 6 r	6 42	10 59	53 6	4	277
4	S	Moon conjunction Mars	5 31 s	7 9	11 18	53 3	5	278
5	**S**	TWENTIETH SUNDAY AF. TRINITY	6 9 r	7 49	11 35	52 6	6	279
6	M	*St. Faith*	5 26 s	8 44	11 56	51 7	7	280
7	Tu	Day-break, 4h. 15m.	6 13 r	9 56	12 12	51 4	8	281
8	W	Henry Fielding died, 1754	5 21 s	11 20	12 30	51 4	9	282
9	Th	*St. Denys*	6 16 r	morn.	12 48	51 4	10	283
10	F	*Oxford and Cambridge Terms begin*	5 17 s	0 50	13 3	51 4	11	284
11	S	*Old Michaelmas Day*	6 19 r	2 19	13 19	51 4	12	285
12	**S**	TWENTY-FIRST SUND. AF. TRINITY	5 13 s	3 52	13 33	51 3	13	286
13	M	Moon eclipsed, visible	6 23 r	rises.	13 48	51 0	14	287
14	Tu	William Penn born, 1644	5 8 s	5a17	14 2	50 7	15	288
15	W	Jupiter sets, 4h. 40m. A.M.	6 26 r	5 35	14 15	50 3	16	289
16	Th	Moon conjunction Uranus	5 4 s	6 1	14 27	49 5	17	290
17	F	Sir Philip Sydney killed, 1586	6 29 r	6 38	14 39	48 8	18	291
18	S	*St. Luke*	4 59 s	7 30	14 51	48 2	19	292
19	**S**	TWENTY-SECOND SUN. AF. TRINITY	6 33 r	8 35	15 2	47 6	20	293
20	M	Coleridge born, 1772	4 55 s	9 50	15 12	47 0	21	294
21	Tu	Nelson killed, 1805	6 36 r	11 9	15 21	46 5	22	295
22	W	Venus opposition Uranus	4 51 s	morn.	15 30	46 0	23	296
23	Th	Day 10h. 8m. long	6 40 r	0 25	15 38	45 5	24	297
24	F	Queen Jane Seymour died, 1537	4 47 s	1 39	15 46	45 1	25	298
25	S	*St. Crispin*	6 43 r	2 50	15 52	44 7	26	299
26	**S**	TWENTY-THIRD SUND. AF. TRINITY	4 43 s	3 58	15 58	44 6	27	300
27	M	Sir Walter Raleigh beheaded, 1618	6 47 r	5 8	16 3	43 2	28	301
28	Tu	*St. Simon and St. Jude*	4 39 s	sets.	16 8	45 4	N	302
29	W	John Keats born, 1796	6 50 r	4a30	16 11	46 2	1	303
30	Th	Moon souths, 0h. 51m. P.M.	4 35 s	4 47	16 14	46 6	2	304
31	F	John Evelyn born, 1620	6 54 r	5 13	16 16	46 6	3	305

ASTRO-METEOROLOGICAL PREDICTIONS.

A seasonable month this year. Look for numerous falling stars and other meteors of an electrical kind between the 17th and 26th. 1st, Chiefly fine—2nd, Temperature falls, cloudy—3rd, Cloudy—4th, Fine, wind—5th, Showers, fine intervals—6th, Changeable, prebably thunder—7th, Cool, turbulent air—8th and 9th, Fine—10th, Seasonable light wind—11th, Cooler, cloudy for rain—12th, Fine—13th, Showers at the eclipse—14th, Dull, small rain or fog—15th, Chiefly fine—16th, Temperature going down, some wind—18th, Wind continues—19th, Squally—20th, Showers—21st, Threatening—22nd, Small rain, foggy—23rd, Finer—24th, Fair and pleasant—25th, Changeable— —26th, Dull, small rain or fog—27th, Finer—28th, Seasonable—29th, Warm, misty—30th, Showers—31st, Dull and rainy, fog prevails.

November.

MOON'S QUARTERS.

5—First Quarter .... 5h. 22m. P.M.
12—Full Moon................ 8h. 55m. A M.
19—Last Quarter............10h. 34m. A.M.
27—New Moon .... 4h. 1m. P.M.

22—Sun enters Sagittarius, 1h. 51m. A.M.
11—Moon in Perigee, 6h. A.M.
23—Moon in Apogee, 0h. P.M.

Day of M.	Day of W.	Anniversaries and Festivals.	Sun rises & sets.	Moon rises & sets.	Clock after Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	h. m.	m. s.	°		
1	S	*All Saints*	6 56 r	5a48	16 17	46 6	4	306
2	**S**	Twenty-fourth Sun. af. Trinity	4 30 s	6 38	16 18	46 2	5	307
3	M	Moon souths, 4h. 22m. P.M.	6 59 r	7 44	16 18	46 0	6	308
4	Tu	William III. landed, 1688	4 27 s	9 2	16 17	46 1	7	309
5	W	Battle of Inkermann, 1854	7 2 r	10 23	16 15	46 3	8	310
6	Th	Gustavus Adolphus died, 1632	4 23 s	11 53	16 12	46 3	9	311
7	F	John Milton died, 1674	7 6 r	morn.	16 9	46 3	10	312
8	S	Camden died, 1622	4 20 s	1 20	16 4	46 2	11	313
9	**S**	Twenty-fifth Sund. af. Trinity	7 10 r	2 48	15 59	46 0	12	314
10	M	Martin Luther born, 1483	4 16 s	4 17	15 53	45 7	13	315
11	Tu	*St. Martin*	7 14 r	5 50	15 46	45 3	14	316
12	W	*Cambridge Term divides*	4 12 s	rises.	15 39	44 8	15	317
13	Th	Sir John Moore born, 1761	7 17 r	4a29	15 30	44 3	16	318
14	F	Sun parallel Uranus	4 9 s	5 14	15 21	44 0	17	319
15	S	William Cowper born, 1731	7 21 r	6 17	15 10	43 8	18	320
16	**S**	Twenty-sixth Sund. af. Trinity	4 6 s	7 31	14 59	43 7	19	321
17	M	Day 8h. 12m. long	7 24 r	8 51	14 47	43 6	20	322
18	Tu	Cardinal Wolsey died, 1530	4 4 s	10 10	14 35	43 5	21	323
19	W	Mercury sextile Mars	7 27 r	11 25	14 21	43 5	22	324
20	Th	*St. Edmund King and Martyr*	4 1 s	morn.	14 6	43 4	23	325
21	F	Princess Royal born, 1840	7 32 r	0 37	13 51	43 4	24	326
22	S	*St. Cecilia*	3 57 s	1 47	13 35	43 4	25	327
23	**S**	Twenty-seventh Sun. af. Trinity	7 36 r	2 56	13 18	43 5	26	328
24	M	John Knox died, 1572	3 55 s	4 7	13 0	43 5	27	329
25	Tu	*St. Catherine*	7 31 r	5 19	12 42	43 5	28	330
26	W	Dr. Isaac Watts died, 1748	3 54 s	6 33	12 23	43 6	29	331
27	Th	Mars trine Uranus	7 44 r	sets.	12 3	43 6	N	332
28	F	Oliver Goldsmith born, 1713	3 53 s	3a49	11 42	43 6	1	333
29	S	John Ray born, 1628	7 45 r	4 34	11 21	43 6	2	334
30	**S**	First Sunday in Advent	3 51 s	5 37	10 59	43 5	3	335

ASTRO-METEOROLOGICAL PREDICTIONS.

A stormy period, especially during the third week. Meteors will be observed from the 12th to the 14th. 1st, Chiefly fine—2nd, Dull, rain or fog—3rd and 4th, Seasonable—5th, Cloudy, showers—6th, Cold and cloudy, downfall—7th, Dull, foggy—8th and 9th, Chiefly fine—10th, Cloudy for rain—11th, Light wind—12th, Showers—13th, Seasonable—14th and 15th, Cold and dull, with rain or sleet—16th, Stormy, turbulent air, with rain or snow—17th, Changeable, cloudy—18th, Dull, small rain and fog—19th, Wind and rain—20th, Cold and dull, rain—21st, Finer, mild—22nd, Changeable—23rd, Windy, cloudy—24th, Chiefly fine, wind—25th, Some rain—26th, Small rain, dull—27th, Dull, foggy—28th, Chiefly fine, strong wind—29th and 30th, Dull and cold.

December.

MOON'S QUARTERS.

5—First Quarter ....3h. 26m. A.M.
11—Full Moon ....8h. 13m. P.M.
19—Last Quarter ....6h. 44m. A.M.
27—New Moon..............8h. 45m. A.M.

21—Sun enters CAPRICORNUS, 2h. 39m. P.M.
9—Moon in Perigee, 0h. P.M.
21—Moon in Apogee, 6h. A.M.

Day of M.	Day of W.	ANNIVERSARIES AND FESTIVALS.	Sun rises & sets.	Moon rises & sets.	Clock after Sun.	Mean Daily Temp.	☽'s Age.	Day of Y.
			h. m.	*h. m.*	*m. s.*	°		
1	M	Leo X. died, 1521	7 47 r	6a52	10 36	43 3	4	336
2	Tu	Mars souths, 3h. 8m. P.M.	3 51 s	8 13	10 13	43 0	5	337
3	W	Sun parallel Saturn	7 49 r	9 38	9 49	42 3	6	338
4	Th	Richelieu died, 1642	3 51 s	11 3	9 24	41 2	7	339
5	F	Sun semisquare Mars	7 52 r	morn.	8 59	40 5	8	340
6	S	*St. Nicholas*	3 50 s	0 28	8 34	39 7	9	341
7	**S**	SECOND SUNDAY IN ADVENT	7 54 r	1 52	8 8	39 4	10	342
8	M	*Conception of Blessed Virgin Mary*	3 49 s	3 19	7 41	39 2	11	343
9	Tu	John Milton born, 1608	7 56 r	4 51	7 14	39 0	12	344
10	W	Sun conjunction Mercury	3 49 s	6 24	6 47	39 0	13	345
11	Th	Day 7h. 50m. long	7 58 r	rises.	6 19	39 1	14	346
12	F	Moon souths, midnight	3 48 s	3a55	5 51	39 4	15	347
13	S	*St. Lucy*	8 0 r	5 5	5 23	39 8	16	348
14	**S**	THIRD SUNDAY IN ADVENT	3 49 s	6 25	4 54	40 2	17	349
15	M	Henri IV. born, 1553	8 2 r	7 47	4 25	40 4	18	350
16	Tu	*Cambridge Term ends*	3 49 s	9 6	3 56	40 6	19	351
17	W	*Oxford Term ends. Ember Week*	8 3 r	10 21	3 26	40 7	20	352
18	Th	Philip Miller died, 1771	3 49 s	11 33	2 57	40 4	21	353
19	F	Tycho Brahe born, 1586	8 4 r	morn.	2 27	40 0	22	354
20	S	Night 16h. 16m. long	3 49 s	0 42	1 57	39 5	23	355
21	**S**	FOURTH SUNDAY IN ADVENT	8 5 r	1 52	1 27	39 0	24	356
22	M	Dr. Wollaston died, 1828	3 50 s	3 4	0 57	38 5	25	357
23	Tu	Jupiter rises, noon	8 6 r	4 17	0 27	38 4	26	358
24	W	George Crabbe born, 1754	3 51 s	5 33	before	38 3	27	359
25	Th	CHRISTMAS DAY	8 7 r	6 48	0 33	38 0	28	360
26	F	*St. Stephen*	3 52 s	7 57	1 3	37 9	29	361
27	S	*St. John the Evangelist*	8 7 r	sets.	1 33	37 9	N	362
28	**S**	SUNDAY AFTER CHRISTMAS	3 54 s	4a38	2 2	38 2	1	363
29	M	John Wycliffe died, 1384	8 8 r	6 0	2 32	38 4	2	364
30	Tu	Roger Ascham died, 1568	3 55 s	7 26	3 1	38 2	3	365
31	W	*St. Silvester*	8 8 r	8 51	3 30	38 0	4	366

ASTRO-METEOROLOGICAL PREDICTIONS.

Dull weather, with much downfall the second week, and at the end of the year. 1st, Fog and small rain—2nd, Dull, turbulent air—3rd, Windy, cold and dull—4th, Damp and foggy—5th and 6th, Milder—7th, Seasonable—8th, Small rain, dull—9th, Cloudy—10th, Windy, cloudy—11th, Rain—12th, Chiefly fine—13th, Cold and cloudy, rain—14th, Fog and rain—15th, Fine—16th and 17th, Wind—18th, Seasonable—19th and 20th, Chiefly fine—21st, Light wind—22nd, Generally fine and mild—23rd, Seasonable—24th, Stormy, rain or snow—25th, A dull Christmas, rain—26th, Cloudy—27th, Finer, some wind—28th, Cold and cloudy—29th, Dull, foggy, rain—30th, Wind and rain—31st, Chiefly fine.

JANUARY.

Stern winter's icy breath, intensely keen,
Now chills the blood and withers every green;
Bright shines the azure sky, serenely fair,
Or driving snows obscure the turbid air.

FLORICULTURAL OPERATIONS.

ANNUALS.—If seed was omitted sowing in autumn for early blooming plants next spring, now sow some in small pots, place them in a frame free from frost, and turn out into beds early in April. Where seeds were sown in autumn, keep the plants free from fallen leaves, or other litter. Sow a few more towards end of the month. Sow Auriculas and Polyanthuses in pans, and place in a shady part of a cool frame. Prune Roses, and sprinkle the heads over freely with soot and lime liquid, as it will destroy moss or insects, and preserve them from the ravages of such enemies in summer. Plant Roses and Hollyhocks immediately, or they will not bloom well this season. Carnations, etc., in pots must have air liberally; if attacked by mildew, dust over and under with sulphur, also protect from severe frost and excess of rain. Prepare compost for the show-plants to grow in. Pinks and Pansies in beds must have the soil pressed closely round the main stem, and a number of sticks be pricked among the shoots, or they must be secured by pegs, so they are not twisted by the wind. A low hedge, formed of yew or fir branches along the sides, will also be beneficial, as a protection from wind. Pinks, Carnations, etc., sprinkled over with soot, will preserve them from hares, rabbits, and snails. Tulips, Hyacinths, and other bulbs in beds, protect from severe frost; an inverted garden-pot will do. Also protect the beds of Ranunculuses and Anemones which were planted in autumn. Gladioluses to succeed the autumn planted should now be planted, and a few more in February, March, and April; they will bloom in succession to the end of November. Verbenas guard against damp and mildew; admit dry air, and dust over and under with sulphur. To propagate early, place a few plants in gentle warmth. If green-fly attack them, tobacco-smoke must be given. Tulips, have the soil pressed closely round the plant. Fresh loam must be added to all flower-beds; it promotes an abundance of flowers; also give well-rotted manure or leaf-mould. Divide large plants of the herbaceous class of the borders, replant, etc. Shrubs, layers of most kinds, may now be made; plant where required. Lobelias of the erect-growing class, must be guarded from an excess of wet; but towards the end of the month place them in a rather warmer situation, and gradually encourage the offsets to grow, in order to divide and pot singly in February. Prune Roses, protect the heads of tender ones. Box, edgings of it ought to be planted in autumn, but if required now, sooner the better. Ranunculus bed for the show-class of flowers throw the soil out to the depth of a foot or more, in order to admit the compost for planting in next month. Dahlias, see the roots are not shrivelling; pot any choice kinds for early striking.

FORCING STOVE, FRAME, ETC.—In order to have early, or very large plants of Cockscomb, Globe Amaranthus, Balsams, Salpiglossis, etc., sow seeds by the middle of the month; also a portion of Ten Week and German Stocks in pots or slight hotbed; also other handsome half-hardy kinds or flowers to bloom early. Amaryllis, Sprekelias, etc., now repot; also begin to push (gradually), for early bloom, some of the Achimenes; give one good watering to Achimenes at first; the plants will soon push, then pot singly, when the plants are an inch high. Gloxinias and Gesnerias, give but a little water to start them, as much would rot them, and when the shoots appear, then increase the quantity. Bedding plants, any that have fresh shoots, and plants are required of them, take off cuttings, strike, etc.; or place the old plants in higher temperature, to push them into growth, such as Fuchsias, Salvias, Heliotropes, Anagallis, Hemimeris, Cupheas, Geraniums, etc. The Bouvardias are best increased by the roots; cut them into pieces an inch long, and cover them half an inch in silver-sand, place them where they get bottom heat, and they soon push shoots; then pot singly. Sow Mignonette in pots for early bloom. The autumn-sown plants must have dry and mild air. Composts, now provide heaps of the various soils and manures. Flower-beds should have an addition of fresh loam, it very much increases a profusion of bloom. Add manures to beds where requisite.

GREENHOUSE, ETC.—Tender Annuals for summer ornamenting the greenhouse, or planting out in open beds, sow a portion now for early blooming. Never give fire-heat to Ericas as long as you can preserve them from frost, and except in very windy or foggy weather; let them, as well as Epacris, Azaleas, and indeed all the class of New Holland plants, have a free supply of air, allowing the gentle winds to blow upon them. Let watering be done in the morning, so that damp may be dried up. Damp must be guarded against; apply a gentle fire to dry it up, if not otherwise done. Fuchsias now prune in, and repot the large plants which are required for early bloom or to furnish cuttings for striking, and supply new plants for late summer blooming. *Tropæolum tricolorum* and the other tuberous-rooted must now be potted. Camellias, keep the entire ball of soil regularly moist, or the flower-buds will drop; thin the crowded buds. Pot Alstrœmarias, Ixias, and Oxalis, with any other greenhouse bulbous-rooted plants. Pelargoniums, now spread the branches outwards, in order to properly form the plant, bringing some as low as the rim of the pot. Cuttings of Azaleas strike root much more freely early in the spring than later on, therefore now place in a gentle heat any stock plant, in order to obtain the half-ripened shoots by the proper period, such being best for rooting in silver-sand, with bottom heat. Cinerarias, if green-fly attack them, fumigate with tobacco immediately. Also fumigate the general stock of greenhouse plants, if any of these insects appear.

FEBRUARY.

Winter, still lingering on the verge of Spring,
Retires reluctant, and from time to time
Looks back, while at his keen and chilling breath
Fair Flora sickens.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—Annuals, sow the hardy towards the end of the month, and tender ones in pots immediately, or on gentle hotbeds, as Stocks, China Asters, French Marigold, etc. Stir the surface of all flower-beds, add manure and fresh loam, divide and replant the hardy herbaceous flowers; if deferred much longer, the plants will not get well rooted before the tops shoot, and thus will be weakly. Bulbs, protect beds of, from frost and strong winds; also of autumn-planted Anemone and Ranunculus. Auriculas and Polyanthuses, take off any offsets, top, dress, keep from frost, give air freely, and sow seeds of. Pansies in pots, put into blooming-pots. Dahlia cuttings strike in moist temperature, also Verbenas. Ranunculus bed make directly; it will duly settle by the 15th; then have them planted, also Anemones, Carnations, Picotees, Pinks, and Pansies in pots, allow all air possible, and if the leaves begin to be spotted, dust them over and under with sulphur. Lobelias, divide and pot the suckers of the tall kinds. See that there is a sufficiency of bedding-plants in course of preparation. Violets, attend to; have a supply of flowers till May. Give manure-water twice a week to Auriculas and Polyanthuses; sheep-dung, put into a tub with soft water, is the best for them. Pansies may also have some. Sow Mignonette in pots, for boxes. Tuberoses, plant in pots, or open border in a warm situation. Shrubs for forcing next winter should now be potted, such as Persian Lilacs, Kalmias, Azaleas, etc. Verbenas, mind the mildew attacks, sprinkle over and under with sulphur, strike cuttings now. If green-fly attack, fumigate. Chrysanthemums must be protected from severe frost.

GREENHOUSE.—Cinerarias repot; if the green-fly attack, fumigate immediately. Place them near the glass; a pit-frame, dry, is best. Calceolarias, repot; sow seed. Camellias, inarch or graft; before the new shoots begin to push, place in a hotbed frame. Do not allow the blooming-plants to lack water, or flower-buds will drop; cuttings of the single put in to graft upon. Pelargoniums, to bloom in May, now repot into blooming-pots. Repot the smaller plants, too. Epacris, Corrœas, Acacias, Coronillas, etc., will now be gay; water seldom, but give as much as will moisten the entire ball at each time. Ericas attacked with mildew, sprinkle over and under. Alstrœmerias, repot. Air admit freely when dry and mild. Azaleas, place in warmest part. Chinese Primroses, give manure-water; it improves the colours of flowers. Fuchsias, prune and start the best sorts in a hotbed; train, put in cuttings. Begonias, some are fine for bloom now. Show Pelargoniums must be put into their blooming-pots, with balls entire. Scarlet Pelargoniums, see to the large plants, pot if required for extra specimens, etc., gently bring them on. Insects will now be moving, fumigate, sulphur, etc., and attend to it at once. Pot the *Lilium lancifolium* for early bloom.

FORCING-STOVE OR FRAME.—Achimenes, Amaryllis, Gloxinias, Gesnerias, etc., now start another lot, and pot off any which were started last month. Sow seeds of Balsam, Cockscomb, Globe Amaranthus, Salpiglossis, and all the other tender Annuals for summer ornamenting the greenhouse, and keep the surface-soil just moist at all times, till the plants are up and rooted. Hyacinths, let them be near the glass and free air, change the water every fourth day. Put in cuttings of all plants required for bedding. Cinerarias, bring some forward; destroy green-fly. Ixoras, and similar plants for exhibiting, must be repotted, and the general stock of plants should be repotted this month, pruned, and trained. A hot but moist temperature is best for the above purposes. Roses, frequently syringe, guard against green-fly.

MARCH.

Now shifting gales with milder influence blow,
Cloud o'er the skies, and melt the falling snow;
The softened earth with fertile moisture teems,
And, freed from icy bonds, down rush the swelling streams.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—The summer display principally depends on the preparations made this month; therefore not only provide an abundance of suitable stock, but rather be beforehand with it too. Do not delay a single day in the operations necessary, and have a plan made of the garden, lawn beds, etc., and upon it arrange the best contrasted colours, then set to it in earnest to provide suitable plants, vigorous and abundant, and prevent a failure of show.

Annuals, hardy, sow on dry borders, half-hardy, as Asters, Stocks, etc., as well as the tender ones, in pots, placed in heat, or on gentle hotbeds. If there be too many plants in a patch of the autumn-sown hardy annuals, transplant the surplus. Provide pots of Mignonette for boxes, sow seed thinly, and pull up all plants but three or four, and when fit to turn out with entire balls into boxes, let it be done; a succession must in due course be provided. Pansies in pots should be repotted into the pots to be shown in, and give manure-water twice a week. Pinch off the present flowers in or out of bloom. Auriculas and Polyanthuses must have air freely to keep them robust; but protect from wet lodging in the hearts. Give manure twice a week. Sheep's dung and soft water make the best liquid for them. Carnations and Picotees, in wet seasons, are often attacked by mildew, and the leaves are spotted; dust the plants over and under with sulphur, in such continuous weather, and it will prevent the mildew. Protect from cutting winds; now is the trying time with them. The last week of the month pot off the plants which are to produce the exhibition flowers, in a compost of two barrowfuls of fresh yellow loam, three of well-rotted horsedung, and half a barrowful of river sand, well mixed, but not sifted. *Lilium lancifolium*, and its varieties, should now be potted, or planted in the open ground. Phloxes be divided; if in pots, turned out into border. Pink and Pansy beds should be dressed, adding to the surface two or three inches of equal parts of fresh loam and well-rotted manure, mixing it with the top soil of the bed; secure the plants from being twisted by wind. Tulips will now grow fast; have the soil firm round the plant, protect from frost, strong winds, and excess of rain. Verbenas, pot off newly struck cuttings; repot the stock plants which are to be exhibited in pots, and nip off the leads to form bushy, spreading plants; fumigate occasionally, and dust the under side of the leaves with sulphur, to prevent red spider attacks. Protect beds of Hyacinths, Ranunculus, etc., if severe weather occurs. Tie the stems of Hyacinths to sticks, or strong winds will break them off. Divide and replant hardy herbaceous perennials; as Phloxes, Veronicas, etc. Plant out Canterbury Bells, Scabious, Sweet Williams, Wallflowers, etc. Violets, take off runners, and plant in frames for next season's supply of flowers. Bedding plants, which are in the cutting-pots, should be potted off to get them strong; and repot those which are in thumb-pots. Chrysanthemums, to bloom in the open ground, must now be planted; let the soil be rich; if placed where some of the stems can be layered in June or July, the ends will make pretty dwarf bushy plants; put in cuttings for pot culture, one cutting in each sixty-sized pot. Hollyhocks in pots turn out into the open ground in deep rich soil.

GREENHOUSE.—Cinerarias must be put in their blooming-pots, water freely, and fumigate about once a fortnight, or green-fly will prevail. Chinese Primroses, give a liberal supply of water, twice a week give manure-water, and the flowers will be of much brighter colour. Sow seed for plants which are to bloom next winter. Calceolarias, repot into blooming-pots; let them have all the air possible; only preserve from harm by frost, and fumigate once a fortnight. Fuchsias, repot; and now begin to train and form them; the pyramidal shape is the best; standards, with large heads, are pretty. Pelargoniums, train and arrange the branches of the large plants. Such plants as are desired to bloom after July must have the leading shoots stopped now. Give liquid manure to the large show specimens every third watering. Syringe overhead twice a week with soft water. Almost all young plants potted in autumn, or recently from the cuttings put off in autumn, will require the leading shoot to be stopped, in order to have bushy plants. Tender Annuals, as Salpiglossis, Globe Amaranthus, Balsams, etc., for ornament in summer, now pot off singly. Camellias done blooming, promote their growth, and put in cuttings of the single flowers for grafting. Chrysanthemums, pot off cuttings, and pot off autumn-struck ones; pinch off the leads. Green-fly; fumigate, or dip over head in strong tobacco-water; any plant attacked do not delay.

STOVE.—Pot or repot Amaryllis, Gesnerias, Gloxinias, Achimenes, and other similar plants; do not delay. Ixoras, and such like plants, for exhibitions, repot, stop, and tie out; bottom heat is essential to success with Ixoras, and most others of this class of plants. Syringe overhead every morning, and frequently pour water over the paths. Achimenes, Æschynanthus, etc., intended to be grown in baskets, should now be put in them.

APRIL.

Now daisies pied, and violets blue,
  And lady-smocks of silver white,
And cuckoo buds of yellow hue,
  Do paint the meadows with delight:
The cuckoo now on every tree
  Sings cuckoo, cuckoo.
    SHAKESPEARE.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—Let the previously prepared plan of beds, and the present stock of plants be examined, in order to have a due supply, and lose not a day in beginning to provide for deficiencies. Have all your plants bushy as possible; attend to stopping the leading shoots. Sow a succession of hardy and half-hardy Annuals, and the last week of the month sow seeds of biennials, as Hollyhocks, Sweet Williams, Scabious, Canterbury Bells, etc., also seeds of perennials. Auriculas and Polyanthuses, shade, give plenty of air, and secure the stems; give manure-water every third watering. Pot off new-struck Dahlias, and repot those you intend to grow for exhibition, so as to have the plants strong and robust by turning-out time. Plant out roots of Marvel of Peru, Carnations, etc., pot off directly; shade for a day or two. Pink and Pansy beds must have the surface stirred, and an inch of fresh soil spread over. If Tulips, Hyacinths, Ranunculus, or Anemones be affected by frost, early in the morning sprinkle cold water over them. Let the covering be over the Tulips, but open at the side. A shower of rain every few days will be beneficial; if such occur, roll up the covering. Secure all the flower-stems of Tulips or Hyacinths, so that the tall ones do not get broken by strong winds. Twist together two or three pieces of green worsted, and place a nice green stick at each end of the row; to one secure the worsted, then put it round the stalk of the first flower, and tie in a loop, carrying it on through the row, and secure the other end to the stick. The flower-stems are thus kept safe, at equal distances, and as they rise, draw up the sticks or worsted at each end in proportion through the season. Stir the surface of the bed, and protect from hail-storms. Bud China and Tea Roses as soon as the bark will rise. If early Roses are attacked by insects, sprinkle with sulphur and tobacco-dust. Pansies, in pots, give manure-water twice a week; plant others in beds for late bloom. Verbenas, stop and train, and give manure-water twice a week; strike cuttings. Prick out Annuals, as China Asters, Stocks, etc., in a warm situation to strengthen, prior to final planting for bloom. Ranunculus, let the soil be pressed firm about the neck of the plants, add an inch of fresh strong loam over the bed, and water freely between. Tall Lobelias, encourage by repotting, whether for beds or otherwise. Wallflowers, sow for next spring-blooming. Transplant runners of Neapolitan Violets, to be potted or planted on a bed afterwards for blooming. Cuttings of China Roses, put out firm in a shady border, will soon strike root. Rose stocks, cut back to a bud or two all shoots not required for budding on. Layer Rhododendrons, Acubus, Azaleas, etc.

GREENHOUSE.—See that Balsams, Salpiglossis, Globe Amaranthus, Brachycomas, etc., are flourishing for summer ornament. Tall Lobelias, repot. Cuttings of the young wood of Azaleas, Epacris, Heaths, etc., which bloom during autumn or winter, will now strike freely. Vases and baskets of plants now get ready. Salvias, strike cuttings for plants to bloom in autumn or winter. Fuchsias, train, give manure-water occasionally. Camellias, water freely whilst in bloom; if over, then repot into a size larger, put them in a gentle warmth, and promote a vigorous growth of new shoots, till the flower-buds just appear.

Orange and Lemons, graft or inarch; place in a hotbed frame of gentle heat. Pelargoniums, guard against green-fly, or the flowers will soon be destroyed; fumigate two nights together, then syringe freely, using soft water; twice a week give manure-water. Plants to bloom in August and September, now stop the shoots; those now in bloom should be shaded during mid-day. *Lilium lancifolium*, encourage by repotting. Chrysanthemums, strike, pot, etc. Oleanders, encourage by a little extra heat.

STOVE.—The winter-blooming plants cut down, and as soon as new shoots appear, repot. Achimenes, repot; also Cockscombs, etc. Baskets of drooping plants occasionally dip in water. Gloxinias and Gesnerias repot, and syringe the foliage over and under twice a day. Ixoras, etc., for exhibitions, supply liberally with manure-water. Cuttings of young wood strike freely now. Gardenias, duly attend to have a succession in bloom, keeping some in frame, and remove here.

MAY.

When that the month of May
Is coming, and that I do hear the birds sing,
And that the flowers begin to spring,
Farewell my book and my devotion:
Now have I then, too, this condition,
That, of all the flowers in the mead,
Then love I most those flowers, white and red,
Such that men call daisies in our town.
CHAUCER.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—Where there is sufficient of covering to protect beds of the usual bedding plants in case of a sudden frost, then early in the month they may be put out; otherwise wait to the middle, or even later, if there is the least apparent risk. Pay particular attention to the arrangement of colours. For producing brilliant effect in masses, use pure decided colours, such as brilliant scarlet, pure white, deep purple, bright yellow, etc. Have the contrast strikingly distinct, whether the bed be of one kind of plant, or, as is now often done, of mixed kinds. However, take care not to mix plants which are of doubtful duration in bloom, with those of a more permanent duration, remembering that the beauty of a formal flower-garden depends upon its being in all its details a perfect work of art, in which there should not be a blemish. There must be high keeping, symmetry, judicious arrangement of colours (traceable to fixed principles), or it will not form a satisfactory whole. Many persons plant their beds thinly, and in consequence they have a bare appearance through the season; we advise thick planting, both for speedy and continuous effect. Anemones and Ranunculus, water well between the rows: in dry weather using soft water. Auriculas and Polyanthuses done blooming, remove to a north-east aspect, where they will not have the sun after ten o'clock a.m.; take off offsets and repot the entire stock, destroy green-fly, which often attacks them in May. Bulbs, previous to going out of bloom, see the kinds are correct, and before the foliage is destroyed and removed, mark the spot with a stick where the root is. Tender Annuals, as Asters, Stocks, Marigolds, etc., raised in pots or frames, take up, with all the soil adhering, and plant out for blooming; shade for a day or two. For late blooming sow more hardy annuals. Cuttings of China and Tea Roses strike in shady places. Tulips, Hyacinths, Ranunculus, etc., must be shaded from sun and rain whilst in bloom. The side canvas should be thin and open, like fine network, to admit a free draught of air, whilst at the same time protection is given from strong winds. Verbenas, for pot-culture, grow them in equal parts of light loam, leaf-mould, and old well-rotted manure, with a sprinkling of silver sand, and a free drainage; train, fumigate, as green-fly is troublesome now. It is best to fumigate the plants about to be put in the borders, for after planting it is awkward to do it. Pinks in beds, give liquid manure, and thin the flower-buds. Biennials, as Scabious, Canterbury Bells, Sweet Williams, etc., may be sown. Roses, destroy the fly as soon as it appears, prevent it getting ahead; smoke and gas-water are remedies. Pot off slips of Double Wallflowers, under a hand-glass, in a shady place. Trim off natural shoots from Rose stocks. If the weather be free from frost, each evening sprinkle overhead the bedding plants; it greatly contributes to their speedy re-establishment. Lobelias, the tall-growing plant out. Antirrhinums, sow a bed, or in patches; the plants will bloom beautifully from September to December, if frost holds off. Dahlias may be planted the last week in the month. *Œnothera macrocarpa* and *Missouriensis* increase readily by young shoots when three inches long. Wallflowers, to bloom next spring, now sow seed. Pansies, pot off slips or cuttings in a shady place. Divide the roots of Neapolitan Violets, etc., and repot or plant in a bed, for next winter and spring bloom. Take off offsets of Double Rockets, and strike in a shady border.

FORCING-HOUSE AND GREENHOUSE.—Repot Balsams, Globe Amaranthus, Salpiglossis, Browallia, Brachycoma, etc., for summer ornament here. Achimenes, Gloxinias, etc., divide, repot, and promote their immediate growth, in frame or stove. Sprinkle the foliage over and under, twice a day, with soft water. Carefully examine under the foliage to see if red spider has got there; if they have, immediately give the leaves a forcible syringing underneath with strong soapsuds and sizing; this will coat them over and destroy them. Fuchsias, stop the side shoots, to have the plants well and closely formed. Cuttings of short half-ripened shoots of very many plants may now be put in; the new ones will get strong before autumn. Salvias, Cupheas, Lantanas, etc., for winter blooming, put off cuttings. The general stock of greenhouse plants may be put out the last week in the month; have a concreted floor for them, and fill up between the pots with moss; it keeps the roots cool and the foliage healthy. Vases, baskets, etc., of plants must now be prepared.

JUNE.

Now please the eye; sweet Nature's every sense,
The air salubrious of her lofty hills,
The cheering fragrance of her dewy vales,
And music of her woods—no works of man
May rival these; these all bespeak a power
Peculiar, and exclusively her own.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—Autumn-planted Anemones or Ranunculuses will probably be out of bloom; as foliage dies, take up the roots. Bedding plants, each evening sprinkle overhead with soft (pond) water, it greatly promotes their early establishment; now get them on to secure a full bed of bloom. If the soil be rather dry, give as much water at once as will sink as deep as the roots. Peg down firmly those requiring it now. Tulips, take the top cover off, and if the foliage of any assume a yellow appearance, take up the bulb. and any offsets which may be thus earlier than the parent bulb may be taken off, and leave the old bulb a little longer. All that are taken up should be laid to dry in a shady place, where there is a current of wind. Chrysanthemums, stop the leads of strong plants, to make them bushy. Carnations and Picotees that are early will require layering, and early Pinks must have pipings, or slips, put in a shady place. Thin close patches of Annuals, repot Lobelias in large pots, with a very rich soil; also give abundance of water afterwards; by such attention some of the scarlet class grow seven to eight feet high, with numerous side spikes. Turn into open ground out of pots, and water copiously. Shade Ranunculuses and Anemones from sun, but have free side air; water freely between the rows with soft water. Lay reed traps, pots, etc., to entrap earwigs. Biennials and perennials, sown in April or May, will be large enough to be pricked out in beds to strengthen for next year's bloom. If the buds or shoots of Roses be attacked by the fly, make a thick liquid of sizing, and bend each into it, it will coat them over and destroy them. It may be syringed off in a few days, or the rains will clear it; or smoke the trees, having a cover of cloth over each plant. Dahlias, if a foot high, stop the lead, to cause side shoots to push. Pansies, sow seed, put off cuttings in a shady place. Hyacinths etc., if foliage decays, take up bulb. Auriculas and Polyanthuses, keep in a shady place. Sow seeds of Hollyhocks.

STOVE, GREENHOUSE, ETC.—Repot Balsams, Salpiglossis, etc., for summer ornament. Achimenes, Gesnerias, and Gloxinias repot into large-sized ones, in order to have magnificent specimens. If the stock of greenhouse plants which are usually turned out of doors have not been done, do it immediately. Have them where they can be shaded during mid-day sun, but where they have free admission of air. Place them on a concrete floor, or upon a bed of coal-ashes, or gravel rolled even, and covered with gas-tar afterwards. If the plants are not shaded, but open to the sun throughout the day, let the space between the pots be filled with moss, and the outside have a neat basket-like fence to keep up the moss. This prevents the roots at the side of the pots from being injured heat, and their growth is promoted by the moist moss. Occasionally, water must be red over the moss. Now propagate all kinds of greenhouse plants that have a supply oung wood; do not forget it is the harvest for this operation; now struck, the plants ome strongly established before winter. Early put off cuttings, or suckers, of all ysanthemums. Repot Azaleas, and keep in moist heat to promote early vigorous

wood. Also Camellias, be kept in higher temperature, to promote the formation of flower-buds. Cinerarias done blooming turn out into a bed in a shady place.

JULY.

The groves, the fields, the meadows, now no more
With melody resound. 'Tis silence all,
As if the lovely songsters, overwhelmed
By bounteous Nature's plenty, lay entranced
In drowsy lethargy.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN, ETC.—Ranunculuses, Anemones, Hyacinths, Tulips, etc., will now have done blooming, and the foliage be turning yellow; immediately take up the roots, and as some of the tubers are very brittle, be careful not to break any, and dry them in a shady place, having a current of air. Dahlia plants should be freely thinned, allowing three, or at most four, main stems to each plant, and cut clean away all others. Very liberal waterings should always be given after the plants begin to grow freely. A new plantation of Pansies now made will bloom well in autumn. Repot into very rich soil Chrysanthemums, and stop the leading shoot early in the month, so that the main stem is left six to eight inches high; it will cause the production of side shoots, and the plants become low and bushy. The flower-buds of Carnations and Picotees should be thinned where the number would crowd; leave one or two only. Layering also must be completed. Propagate Pinks. Seedlings of Perennials and Biennials should be picked out, or potted singly, to strengthen. Keep Auriculas and Polyanthuses from mid-day sun. Double Sweet Williams may now be increased by slips or layers. All kinds of Roses, except the China, may now be budded; wet days are best for the operation. Double Rockets, Double Scarlet Lychnis, and similar plants, increase by offsets, or the stems may be cut into pieces, each just under a joint, and they readily strike root. Hollyhocks may now be increased by the stems being cut under a bud, and inserted in sandy loam, either in pots, placed in a frame and shaded, or in the open ground in a shady place, under a hand-glass, etc. Collect ripe seeds. Sow Mignonette in pots or boxes, to bloom through winter. Lemon and Orange stocks may now be budded. The Double Violets are often attacked in summer by red spiders; turn up the foliage and sprinkle *it* with liquid mud, sizing, or gum-water. Pansies mildewed, sprinkle with sulphur. Pinks or Verbenas are favourites with rabbits; sprinkle the plants over with soot, after making them wet, and whilst any remains, the plants are safe from them. Water the flower-beds freely in the evening, to have the beds gay. Sow Brompton and Giant Stocks, for next spring blooming. Divide Polyanthuses, repot etc., also Double Primroses, Roses, bud early ones.

STOVE, GREENHOUSE, ETC.—Plants in peat soil, etc., are liable soon to dry; if watering duly be neglected a few times only, the plants, as Heaths, will certainly die soon after. Attend to securing vigorous plants of Achimenes, Gloxinias, etc. Keep the greenhouse gay with beautiful substitutes, as Balsams, Brachycoma, Rhodanthe, Leptosiphon, Salpiglossis, Thunbergias, Globe Amaranthus, Scarlet Geraniums, Fuchsias, Lobelias, Lantanas, Bouvardias, Tree Carnations, etc. Repot all greenhouse plants, whether in-doors or out, at the time you see they want it; never wait a general potting. Propagate stove and greenhouse plants, as much as possible now; the season for the successful operation will soon be over. Pelargoniums done blooming should be cut down, and water withheld, nearly for three weeks; then give a little, and gradually increase. When the new shoots are two or three inches long, repot the plants, etc. The show section of Calceolarias will now be going out of bloom; cut off the tops, and let the plants be placed where they will be shaded from the mid-day sun. Seeds, too, should now be sown, to have good plants before winter. Also of Cinerarias. Camellias, graft, inarch, etc.

AUGUST.

The just Creator condescends to write,
In beams of inextinguishable light,
His names of wisdom, power, and love,
On all that blooms below or shines above,
To catch the wand'ring notice of mankind,
And teach the world, if not perversely blind,
His gracious attributes, and prove the share
His offspring hold in his paternal care.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—This month is the best time for propagating plants for turning out into beds next year; they get well rotted, and, having the leads stopped, are bushy plants by winter setting in, and are well prepared to stand the effects of winter without injury; but before it is proceeded with to any material extent, it is as well that a proper arrangement should be made as to what number of plants are required in another season. Examine the effects of colours; investigate their combinations and contrasts, so as to improve and vary the arrangement another season. To keep up the interest of a garden, especially if planted on the grouping system, requires some considerable skill and forethought, to vary the scene in each succeeding year, so as to prevent the arrangement becoming monotonous. Thus, if warm colours prevail to any material extent this season, it would be as well to introduce a majority of cold colours next season, and to edge each bed of the latter with its complementary warm colour. Indeed, the system of edging beds with contrasting colours imparts a highly interesting feature, especially to such as may be distributed over the lawn without any methodical arrangements. Complete layering Carnations and Picotees; also piping Pinks; and if you have good young struck plants ready for planting out by the end of the month, have a bed prepared, and plant for next year's blooming. They get well established before winter, and bloom vigorously by next season. Have a compost of equal parts of well-rotted dung, good loam, and leaf-mould. Collect ripe Pansy-seed. Make a bed for early blooming next spring. Plant offsets of Tulips, two or three inches deep, in a bed of equal parts of fresh loam and river-sand; do it the last week of the month. Stir up the surface-soil around Dahlias, and give a few inches thick of rotten dung; just cover it with soil, water very freely, and keep the tops well thinned. Plant out Giant, Brompton, and Queen Stocks, where they are to bloom next spring. Sow seed for a later bloom. Strike cuttings of Petunias, Cupheas, Calceolarias, Heliotropes, Verbenas, Geraniums, Salvias, etc. Plant out biennials, and propagate by cuttings, slips, etc., the best perennials.

STOVE, GREENHOUSE, ETC.—This month have the houses painted, inside and outside, whitewashed, etc. Repot Pelargoniums which were cut-down plants of last month; they will have broken sufficiently at the eyes to be shaken out and disrooted, and with a sharp knife take off all straggling roots; repot them in some open soil, with two inches of drainage at the bottom of the pots, potting them into five or six-inch pots according to the quantity of roots, that is, if they were in eight-inch pots; keep them in a close frame or house till they get established, just damping them overhead with a fine rose three or four times a week; as soon as they have recovered from the shift, air may be abundantly given night and day, sheltering them from heavy rains, and keeping them clean from green-fly. Cuttings, now is the time for making a foundation for another season, that is, when the plants are cut down; continue to cut down plants as they go out of flower; sow seed too, as well as of Calceolarias, directly, to get well-rooted plants before winter. Repot Chrysanthemums into their blooming-pots, in a very rich loamy soil, with a free drainage. Have dwarf bushy plants, and give frequent waterings of liquid manure, say every third day; the others soft water. Cinerarias, pot off seedlings, and sow for later plants, also the old plants which were planted in the open shady border after blooming should now be taken up, and offsets be potted. Fuchsias, strike cuttings for next year's strong bloomers.

STOVE, ETC.—Winter-blooming plants, as Justicias, Eranthemums, etc., should now be pruned and potted, if not done last month. Also the *Achimenes picta* and *Gesneria zebrina* should be potted into pans or pots, to get them strong before winter; they are very ornamental. Gloxinias that have ceased blooming should be taken into a cool frame or greenhouse, and gradually lessen the watering, to bring the tubers to a state of rest.

SEPTEMBER.

I saw old Autumn in the misty morn
Stand shadowless like Silence, listening
To silence—for no lonely bird would sing
Into his hollow ear from woods forlorn,
Nor lowly hedge nor solitary thorn;—
Shaking his languid locks, all dewy bright
With tangled gossamer, that fell by night,
Pearling his coronet of golden corn.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN, ETC.—Propagate the bedding plants immediately. Box edging, this is the best time to plant it. Anemones and Ranunculuses, to bloom early plant now:

Bulbs, as Hyacinths, Crocus, Snowdrops, Aconites, Guernsey Lilies, Iris, etc., now plant in borders, etc.; alst in pots if required. Hyacinths in pots, cover six inches deep with rotten bark or leaf-mould. The layers of Carnations and Picotees should now be taken off and potted; the soil must not be rich, or the plants will be likely to grow too vigorous, and become what florists term too gross. Equal portions of year-old turfy loam and leaf-mould, with a small addition of sand mixed therein, is suitable; and having a liberal drainage, keep the compost in a rough state, not finely sifted. Pinks, beds of them may still be made; dig four inches thick of well-rotted dung into the bed a week before planting. Pansy-beds must be made for next spring bloom; pot some of the very best to be kept in a frame through winter. Verbena runners must now be potted in sixty-sized pots; they get well established before winter; have a free drainage. Annual flower-seeds, as Clarkia, Collinsia, Schizanthus, Stocks, Candytuft, Escholtzias, Godetias, Œnotheras, Larkspurs, Nemophilas, Wallflowers, Calliopsises, etc., now sown in small pots, well drained, and kept in a cool frame or cool greenhouse through winter, will be suitable for turning out into the open borders early in March, and will bloom early, before spring-sown ones do. The same kinds of seeds may be sown towards the middle of the month in the open borders; they generally survive the winter, and bloom early and vigorously. Ranunculus, if tubers of the late bloom are allowed to remain now in the ground, they will be starting into growth prematurely; take up early. Cuttings of all China, Bourbon, and Tea Roses, now put in the open ground, under a hand-glass, in sandy loam, soon strike root: buds of them, too, now inserted, do well. Chinese Primroses, for winter and spring bloom, must be repotted. Dahlias, where side shoots are numerous, thin them very freely. Roses may still be budded. Dress the Banksian Roses as is done to Peach-trees, securing to the wall or trellis as many of the present season's shoots as will thinly, but sufficiently, fill up the space allotted; cut away the surplus ones. Prepare beds of the Sweet Neapolitan and Russian Violets; also provide a supply of the Tree Violet. Mignonette, in pots, etc., for winter and spring bloom, must now be sown; sow thinly, and when up, thin the plants so as to leave not more than three or four. This is better than transplanting them; they do not bear it so successfully afterwards, being stunted. Repot Chrysanthemums, and early in the month pinch off the heads of all plants not bushy, or grown too high; do not, however, stop them later than this time, or they would not push side shoots to bloom this season; if large blossoms are required, do not stop the leads, but leave one blossom-bud only to each shoot, and give liquid manure often, the flowers will be monsters in size. Such as are in open ground, cut the roots around, and pot a fortnight afterwards. Lobelias having offsets, pot them off now, to get well established before winter. Plants of herbaceous Calceolarias may now be divided, potted, etc., cuttings or slips, too, pot off; they root freely now. When the patches of Lilies, Narcissus, Crown Imperials, are too large, take them up now, divide and replant. If the sowing of seeds of biennials, as Scabious, Canterbury Bells, Brompton, Queen, or Giant Stocks, Sweet Williams, have been omitted, sow immediately. Tulip-beds, prepare. Double Primroses may be parted, also Polyanthuses.

GREENHOUSE, ETC.—Towards the end of the month, take in the stock which has been kept out of doors; if they are allowed to remain longer, the foliage often turns brown; especially remove Camellias, Ericas, Epacris, Azaleas, Acacias, Corrœas, for autumn and winter blooming, immediately. Previously have the house whitewashed. (See next month's Calendar about arrangement.) Camellias may now be grafted; insert a portion of the new wood that has a bud and leaf, cut longitudinally into a corresponding-shaped cleft in the stock. The grafted plant should be plunged so as to have bottom heat, and be kept closely covered in a frame or pit or hand-glass for a month. Encourage all plants for winter blooming, whether for stove, greenhouse, or frames. Tree Carnations for winter bloom, encourage. Cuttings of nearly all plants, especially bedding ones, may yet be struck. Cinerarias, pot off singly the offsets, etc., from the plants which were turned into the open ground early in summer. Pelargoniums, pot off such as have struck root, and stop the leads of such as require to be made bushy. Sow seed of Cinerarias and Calceolarias, so that the plants may be strong before winter. See that a stock of plants is prepared for forcing for winter bloom. Tuberoses, pot. *Tropæolum tricolorum*, and other tuberous-rooted, now pot. Sow in pots Collinsia, Nemophila, etc., to bloom early in spring, in the greenhouse, or turn out into beds.

OCTOBER.

Summer is gone, on swallows' wings,
And Earth has buried all her flowers:
No more the lark, the linnet sings,
But silence sits in faded bowers.
There is a shadow on the plain
Of Winter, ere he comes again;
There is in woods a solemn sound
Of hollow warnings whisper'd round.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—Plant Turban Ranunculuses, Alstrœmerias, as Van Houtte's Collection; plant in warm border, six inches deep, and protect with dry leaves in winter. Rose-buds, untie the matting of those well taken. Tigridias, take up with all soil possible; dry gradually Hollyhocks; now make new plantations of these noble flowers, and put off slips, offsets, or cuttings. Auriculas and Polyanthuses, Carnations, Pinks, etc., should be placed in their winter quarters, in a dry, sunny, sheltered spot, but, at the same time, where a free circulation of air can be admitted on all proper occasions. The surface-soil must be loosened, and a slight sprinkling of fresh compost be spread over it. Any plants out in the open beds, as Lobelias, should be taken up and potted, for winter preservation, in pits or frames. Chrysanthemums grown in the open ground, and required for blooming in-doors, should be taken up as entire as possible, and be potted with due care; give liberally of manure-water. All tender kinds of plants, as Scarlet Geraniums, Verbenas, requiring winter protection, should be housed immediately. All plants like light; place them as near to the glass as convenience will allow. Tender Roses, grown out of doors, should have protection over the roots, etc., or be taken up and housed. Prepare the Tulip-beds; have the side six inches higher than the path, and the middle of the bed three or four inches higher than the sides.

DAHLIAS.—Let the crown of the roots be covered with a few inches deep of soil around the stems. Beds of Pansies may be made. Shrubs of all kinds may be planted. Roses now planted soon push new roots, and become well established before winter; the soil being somewhat warm, excites the roots immediately.

SHRUBS, ETC., FORCING FOR WINTER BLOOM.—Such as are to bloom early should be gradually prepared, potted immediately, if required, and by the middle of the month introduce such as are desired to bloom by Christmas into the house or pit. The kinds which are well deserving such attention are Roses, Honeysuckles, Jasmines, Poinsettias, Azaleas, Kalmias, Persian Lilacs, Andromedas, Tree Carnations, Pinks (of which Anne Boleyn is the best), Rhododendrons, Rhodoras, Deutzias, Ribes, *Spirea prunifolia*, Mezereums, Gardenias, Cupheas, Heliotropes (the new blue is fine), Scarlet Pelargoniums, Cactuses, Eranthemums, Justicias, Salvias, Gesnerias, Corrœas, Chinese Primroses, Aconites, Mignonette, Primroses, Cinerarias, Stocks, Persian Iris, Crocuses, Cyclamens, Sweet Violets, Hyacinths, Lilies of the Valley, etc. Plant Evergreen Shrubs, etc., as soon as possible in the open ground. Seeds of many annuals, as Clarkia, Gillia, Collinsia, etc., may now be sown in the border, and others in pots, in order to bloom early next spring. Brachycoma, *Schizanthus retusus* and *Hookerii*, Rhodanthe, and Salpiglossis, seeds now sown, plants potted off when strong enough, will bloom vigorously next spring. Plant out seedling perennials and biennials, where they are to bloom next year. Divide hardy herbaceous plants where required; they will soon strike fresh root, the earth now being warmer than in spring, after the winter's cold. Pot Hyacinths, Tulips, etc., for forcing in the first week, and when potted, place them side by side, where worms cannot creep in the holes, and cover the whole, six inches deep, with old spent tan, or old, rotten, dry leaf-mould. The situation should be a warm one, but open to the sun, rain, etc. In this position let them remain till the flower-spike is clearly seen on examination; then remove them, to be forwarded in-doors. In this way they bloom vigorously. Turban Ranunculus, Anemones, Gladiolus, Iris, Snowdrops, Crocuses, Lilies, etc., now plant, and protect the two former in winter. The White Lily, Orange Lily, and Tiger Lily, already been a year in the ground, should not be disturbed; every third or fourth year is soon enough; if disturbed every year, they are always weakly. Take offsets from their sides, and plant them now; they will make fine specimens in two years, when the old patches may be taken up and divided. Take care to have the Dahlias carefully numbered before the frost comes; draw earth around the stem, to save the crown of eyes from injury by frost. Collect seed. When the roots are taken up, do not twist the tubers; do it on a dry day. Take up Sweet Violets, and plant them on a gentle hot bed, for winter bloom. Tree Violets take in-doors. All tender bedding plants must now be got in, such as Verbenas; let the tops be kept dry, and water well when first potted, or put into boxes; afterwards give but little, till they strike root afresh. Place Auriculas, Polyanthuses, etc., in winter quarters. Pot off layers of Carnations, Picotees, and Pinks.

GREENHOUSE, ETC.—The stock of plants must be housed immediately. Care must be taken so that one plant may receive something like its proper treatment without interfering materially with the well-being of its neighbours; and the tender ones must be placed in the best part, for protection from cold wind, as Polygalas, Pimelias, Leschenaultias, Aphelexis, Boronias, Gompholobiums, and Diosmas are injured by being placed where there is a current of wind. Let each plant have all the space possible; and the robust, large-leaved kinds, and the very slender delicate sorts, should be kept as separate as can be arranged, so as to allow a due circulation of air. Be careful that the pots, etc., be perfectly clean before arranged for their winter situation. Repot and fumigate Cinerarias. Let Camellias which are to bloom early be placed in a warmer situation; also any Chinese or Indian Azaleas; so that they be gradually advancing. In watering the stock of plants, let it be done in the early part of the day, so that any excess may be dried up before evening, and damp be avoided, otherwise mouldiness will ensue. Calceolarias strike root freely; now pot off seedlings to bloom next season. Repot Chinese Primroses. Pelargoniums headed down some weeks back, now have pushed shoots an inch or two long; these should be thinned properly. The plants must be repotted, in order to have the roots well established before winter. Shake off the soil and shorten some of the long roots, so that young fibres be promoted, which is essential to the vigour of next bloom. Have a free drainage in the pots. An excellent compost for them is turfy loam, well chopped up, with an equal portion of sandy peat and well-rotted leaf-mould, and half the quantity of well-rotted dung. Give air to the plants in the daytime, and be careful not to give over much water at the roots; for if saturated they will be injured. Young struck plants should have the tops pinched off, to cause the production of side shoots, to render them bushy for next season. Repot some of the Scarlet Geraniums (so called), to bloom during the autumn and winter; they are charming ornaments. So with the Tree Carnations, of which there now are many very beautiful distinct varieties. Liliums, let those in pots be gradually dried by withholding water.

STOVE.—Achimenes, Gloxinias, Gesnerias, etc., done blooming, should have little water given, and soon after be placed in a dry situation, just free from frost, till required for repotting next February. Take care to have plants in preparation for winter bloom, as *Gesneria zebrina, Achimenes picta*, etc.

NOVEMBER.

Where are the flowers, the young fair flowers, that lately sprung and stood
In brighter light and softer airs,—a beauteous sisterhood?
Alas! they all are in their graves; the gentle race of flowers
Are lying in their lowly beds, with the fair and good of ours.
The rain is falling where they lie; but the cold November rain
Calls not from out the gloomy earth the lovely ones again.

FLORICULTURAL OPERATIONS.

FLOWER GARDEN.—Directly finish planting Bulbs, also Ranunculuses and Anemones; a little sand round each will assist in preserving them from wet. Also plant out Brompton or Queen Stocks, where they may be protected in winter, and preserved for planting out in spring. Tubers of *Salvia patens* should be kept dry. Plants of spring flowers, as Hepaticas, Primroses, Polyanthuses, Winter Aconites, Wallflowers, Bulbs, etc., should now be planted near the dwelling-house. This is the best month for planting all kinds of hardy Roses. They may also be pruned, except the China section, which should be left till the beginning of March. In pruning, have the branches quite open, and cut the present year's shoots back to about two buds; this severe cutting is essential, to have fine Roses. All Roses must have a very rich soil; and old rotten cow-dung is the best, mixed with leaf-mould and strong loam (equal parts), and a dry subsoil. When the heads of Roses are too large, cut the entire back to within a few inches of their origin, and begin anew. Fuchsias flourish, and are highly ornamental, grown in the open ground. The shoots must not be cut back till spring; they may be tied up neatly, and will not appear unsightly. Cover around them with a few inches thick of dry leaves, spreading a little soil over them, to keep them at the place. This is one of the best coverings for the roots of tender plants. The leaves often keep dry throughout the winter, and frost does not penetrate beneath. In the first week plant the select Tulips. The readiest and most regular way is to plant them on the surface of the bed unfilled to within four inches of the destined surface. Seven strings are then stretched lengthways at equal distances, and secured by nails at each end of the bed; when the bulbs are planted, a short line crosses these, and a bulb is placed at each section; the small line is then removed the requisite distance, and another row put in. When the bed is planted, the strings are removed, and four inches of soil placed over the roots very carefully, so that none are displaced. They are known as first, second, third, and centre row Tulips, referring to the height they usually grow; therefore the two outer rows must be alike in height, and the two seconds, also the two thirds, with the centre (or fourth) row the tallest. Hyacinths in glasses must have rain-water, or river or pond water. A small portion of guano put into the water promotes the growth and vigour of the plant. Only allow the bulb just to touch the water in the glass; place them in total darkness, and change the water solution about once in ten days. In a few weeks, the roots having advanced considerably, the glasses may be removed to a window, or other light situation, to bloom. This process secures the roots in advance of the leaves, and, having that, the latter will grow afterwards; but when leaves are in advance of roots, during the first few weeks the flowers are feeble and small. Dahlia roots take up in dry weather; be careful not to twist the tubers, nor cut the tops off close now, but leave a portion of the side stems, to the part of the main stem, and, in a few weeks after, when evaporation has sufficiently expended itself, then cut it lower down. Take care to get the main stem ripe, solid, and dry. All pit plants must be kept somewhat dry, and have all the air that can be given with safety from frost and rain. Plants kept in rooms must be placed out-doors at all suitable times, to prevent them drawing up. Wash them often overhead, to free them from dust, as dust chokes the pores of the leaves and stems. Decayed leaves on plants are unsightly, and produce a damp atmosphere; let them be removed as soon as they turn yellow. Stir the surface of Pink and Pansy beds; prick sticks amongst the plants, to preserve them from being twisted off by wind. Let Carnations, Picotees, Auriculas, and Polyanthuses have all proper air possible. Verbenas, place near glass, in a dry frame or pit; guard against green-fly and mildew. In the protection of tender plants out-doors, the principles demanding attention are few and simple. A comparative degree of dryness is the first great essential, whether in the atmosphere or the soil. In a frame or pit, this amount of dryness cannot be guaranteed without motion in the air; and this, of course, in the absence of fire-heat, must be accomplished by a very free ventilation at every fitting opportunity, remembering that a small amount of frost is, in general, less prejudicial than an accumulation of damp, which will rapidly tend to a kind of mortification in the system of the plant. The same atmospheric conditions are to be obtained out of doors, as far as attention can secure them; thus, half-hardy plants against trellises or detached, if covered with a mat and stuffed closely with hay inside, will be in danger of perishing of what may be termed suffocation; the same specimen will always run through a long winter better with the mat alone, more especially if the collar is well protected by some dry and porous material, and, above all, the root well top-dressed with sawdust or ashes, or perhaps the two blended. As to comparative dryness of the soil, that must be accomplished principally by the most perfect drainage; this is, indeed, the great desideratum with plants of tender habits; without it other appliances are seldom satisfactory. Mounds of new sawdust or dried leaves, raised around the stem, with a considerable body over the soil as far as the root ranges, will be found of immense benefit, as retaining the ground heat. Hollyhocks, finish planting out, or potting for winter protection.

GREENHOUSE, ETC.—Give all air possible, so as to exclude frost, fog, or rain. Give water to plants sparingly, and do it early in the morning, so that damp may dry up before evening. All plants that have been taken up out of beds, as Scarlet Geraniums, etc., must have little water till they strike root afresh; if this is not strictly attended to, the plants will soon perish. Fumigate, if green-fly appear. Apply sulphur if mildew, on a warm flue, or warmed iron plate. Seedling Calceolarias, repot, and place in a cool but dry frame; so treat Cinerarias also.

FORCING-HOUSE.—In forcing plants for winter bloom, such as half-hardy and hardy shrubs, a gradual increase of temperature must be given; at first from 55° to 60°, and ultimately from 70° to 75°. The following succeed well for this purpose: Aconites, Crocus, Violets, Mignonette, Stocks, Tulips, Cyclamens, Narcissus, Lily of the Valley, Hepaticas, Primroses, China Primroses, Persian Lilacs, Iris, Tree Carnations, Pinks, Hyacinths, Heliotropes, Jasmines, Scarlet Geraniums, Salvias, Gardenias, Roses, Azaleas, Rhodoras, Ribes, Mezereum, Corrœas, Coronilla, Justicias, Poinsettias, Eranthemums,

DECEMBER.

The melancholy days are come, the saddest of the year,
Of wailing winds, and naked woods, and meadows brown and sere.
Heaped in the hollow of the grove, the withered leaves lie dead;
They rustle to the eddying gust and to the rabbits' tread.
The robin and the wren are flown, and from the shrub the jay,
And from the wood-top calls the crow through all the gloomy day.

FLORICULTURAL OPERATIONS.

Flower Garden, etc.—Roses, give a good supply of well-rotted manure, taking off four or six inches of soil, put on the manure, and then cover with a couple of inches of earth. Verbenas, keep them in a dry atmosphere, and have the soil only just moist; guard against green-fly and mildew at the first appearance; examine the under side of the leaves for green-fly. Dahlia roots examine to see they are not decaying; and the last week in the month put in roots for early cuttings. Pink and Pansy beds protect from cold winds by sticking around the sides branches of yew, fir, or some similar guard to break the force. It is very desirable, and a valuable acquisition, now to have the flower-beds, especially within sight of the dwelling-house, as lively in appearance as possible. During winter the Chrysanthemums, in varieties, supply a profusion of beauty, and, if the frost be not severe, will be highly ornamental. If they are grown against a wall, etc., a covering at night is easily supplied. The succession to Chrysanthemums must be made up of evergreen shrubs, previously grown in pots; such as Laurustinus, Aucuba, *Mahonia aquifolia*, with its shiny leaves and profusion of large blue berries, are very pretty. Hollies, if they have their brilliant-coloured fruit, are very ornamental; the yellow-berried contrast nicely therewith. *Cotoneaster microphylla* is also very ornamental, with its vast profusion of red berries. Box, Rhododendrons, Phillyreas, Dwarf Cedars, Arbor Vitæ, and Arbutus, with its chaste pendulous racemes of flowers, are very neat. These and other similar plants give a cheerful appearance to the beds. We have seen beds stuck over closely with small branches of Laurel, Box, Holly, etc., appear well during the entire winter. In flowers there are the beautiful single Anemones, Double Daisies, in fine variety, Gentians, Aconites, Hepaticas, Christmas Rose, *Anemone japonica*, etc., which bloom early in the winter and spring; all are easy of culture, and very ornamental. Later on come in border Auriculas and Polyanthuses. Newly-planted trees or shrubs, secure from being loosened by the wind, or they will not strike root. Carnations, Picotees, and similar plants in pots, give all air in mild weather, protect from frost and excess of wet. Mignonette, Stocks, etc , in pots, for early bloom in spring, water but sparingly; guard against rotting off. Finish planting Roses, take off and plant out suckers, etc. Protect beds of Hyacinths, Tulips, Ranunculus, and Anemones from frost and excess of rain, using hoops and painted canvas covers. Sweet Violets, secure an abundant supply of these fragrant flowers throughout winter and spring. Encourage all spring ornaments, as Crocuses in all their varieties. The dwarf Menziesia, or Irish Heath, both purple and white, are now pretty, and the new beautiful tribe of Double Daisies merit a place in every garden, blooming nearly all the year. Never be sparing of the gay winter or spring flowers. During hard frost, fresh soil, dung, etc., should be supplied to all flower-beds. The hardy dwarf, bushy, and profuse flowering Erica is a charming ornament from February to the end of April.

Stove, Forcing-pit, etc.—The following Stove plants bloom well now:—*Eranthemum pulchellum*, *Gesneria zebrina*, *Justicia speciosa*, *Cestrum aurantiacum*, *Poinsettia pulcherrima*, *Begonia fuchsioides*. The class of plants best adapted for forcing, in order to bloom through winter and spring, are recorded in the November Calendar. Also start a few Gloxinias and Gesnerias for early spring bloom.

Greenhouse.—Prevent damp, give all the mild air possible; do not crowd the plants, stir the surface-soil frequently, and water the plants in a morning. In arranging the stock, keep the large leaved together; the medium sized, and the small too; they succeed best thus placed. Fuchsias, keep them at rest and nearly dry. Pelargoniums, stop every shoot of those plants to bloom in June, or a straggling head of bloom will be the consequence. Cinerarias, required for exhibition, must have all suckers removed, and be repotted, to prevent roots becoming matted, but keep them in a pit-frame to have them robust, and so as to be in bloom at the proper time, fumigate often.

TREATMENT OF THE VINE IN THE GREENHOUSE.

HOWEVER skilful the cultivator of the Vine may be as it respects his pruning and dressing thereof, satisfactory success in the production of fruit will not be realized unless his plants be both healthy and sufficiently vigorous, and such can only be obtained but by their having a properly constructed border of suitable compost to grow in. Some of our readers who cultivate the Vine under glass are already so advantaged; but there are others who are not so circumstanced, and though they may not be able to carry out fully the operations we suggest, to obtain similar benefits, we shall here, for their advantage, give particulars how a suitable border for the growth of the Vine in the greenhouse should be constructed. Where new borders are about to be made, they can be formed on the principle we shall describe; and where Vines are already established, and some improvement in the border is required, though the routine cannot be carried out to the full extent, as near an approximation to it as can be, without injury to the existing Vines, can be pursued.

When a greenhouse is properly constructed for the growth of the Vine, it ought always to have a front wall, built so high that the plate upon the wall may be two feet higher than the general level of the soil in front. This is necessary, in order to let the border have a slope from the house to the front.

The border ought to be at least eighteen feet broad, three feet deep at the back part, and two feet at the front. Particular attention must always be paid to the format on of the substratum, so that the border be *well drained*. Let the substratum have an inclination of at least one foot from the house to the front of the border. A drain must be made close along the front of the building, and another at the front of the border to run parallel with the house. Other cross drains must also be made, the tops of these drains (which must be open stone drains, i. e., stones placed in edgeways) must be about six inches above the level of the substratum. If the bottom of the border be naturally dry, after the drains are made, nothing more is required than to spread about three inches thick of small-sized gravel over the whole of it, which must be rolled to an even surface, then finer over it, and a covering of gas-tar to bind it together, and when rather dry sprinkle it over thinly with sand, and draw the roller over it. When dry, lay upon the entire concrete floor four to six inches thick of broken stones or brick-bats, also, over these, put a thin covering of twigs, to prevent the soil being scattered among the stones, and closing up the crevices. If the bottom of the border be *wet*, in addition to the concrete bottom, let about six inches thick of broken stones, brick-bats, etc., be spread over the whole substratum. By laying over the concrete bottom several inches of stones, etc., it admits water to filter down to the surface of the firm substratum and to run down to the drains; but when it is concreted and without these brickb-ats, etc., the water runs along the face of it, and a few inches of the compost next to it becomes quite wet and sodden, which causes any roots that enter it to decay. The concrete floor prevents the descending roots pushing into an injurious subsoil; and in low, damp situations and in wet soils it prevents damp below rising upwards, and rendering the borders too wet. After this is completed so that the overplus water can be conveyed entirely away from the border, the compost for the Vines must be laid in the space allotted for it. The sort of compost in which the Vine flourishes the best is prepared as follows:—One-half of good gritty loam soil, the thin top spit of a *pasture field*, which has not been lately cultivated for corn, or of a common, let the turf remain upon it; one-quarter of well-rotted manure from old hotbeds, and one-quarter composed of lime rubbish, ground bones, old spent bark, and pigeons or fowls' dung. Let there be equal quantities of lime rubbish, bones, and bark, and about half the proportion of pigeons or fowls' dung. The carcases of animals, cut in large pieces and buried in the soil, promotes the vigour of the vines.

The soil must be procured twelve months before the time it is wanted for use, and must be turned over and chopped in pieces once or twice, so that the turf may become well rotted. In turning over the soil, always do it on a dry day. The manure and the soil must be mixed well together previous to laying it in the excavation. The compost ought to be laid in the place allotted for it, three or four months before the Vines are to be planted in it, so that it may not settle after planting. No part of the Vine should be exposed at the *outside* of the house, as the Vines must be introduced through a sloping hole in the wall, and to enter the house close to the under side of the plate.

The best time to plant the Vines is early in spring. Persons having the convenience of raising Vines themselves may adopt the practice, viz., to raise them from single eyes; this is done by cutting in a *straight* direction through the shoot, about half an inch below a bud, and then cutting in a *sloping* direction about one inch above the bud; these planted in good rich soil early in March, fixed firm in the earth, and placed so deep as to cover the eye, then introduced into a stove, or hotbed frame, until they have pushed, will make strong plants the first year. When there is not the convenience of raising plants, Vines of one year old, propagated from single eyes, may be obtained at most of the public nurseries. At the end of February, Vines which are one year old must be headed down to one bud, and be introduced into a forcing stove. When they have pushed shoots about three feet in length, let them be removed into the greenhouse, that they may not receive a check by their removal for final planting; after two or three weeks they may be planted. In performing this, let the holes in the soil be made about three feet wide and about twelve inches deep. In these put a portion of fine light compost, so as to raise it to the height at which the Vines are to be placed. The Vine must have all the leaves dressed off which are upon that part of the stem which will be *outside* the house. When the plant is turned out of its pot, it will probably be found that the roots are *matted closely together* round the outer side of the ball of earth. If so, let these matted roots be loosened and spread outwards, so that they can, after being planted, push directly forward into the border. In placing the Vine in the hole, let the ball of earth be laid upon its *side*, so that the buds upon the stem are in the direction afterwards required for making an incision as hereafter described. The ball must be placed so far from the front wall, that five eyes of the new shoot lying horizontally upon the earth in the hole may be at the outside, the top of the Vine being introduced into the house through the opening in the wall. Let the Vine thus placed, be supported by a portion of fine compost applied at the sides of the ball, so that it will be secured in the place in which it is to remain. The Vine must be placed so deep in the hole that the upper side of the ball be six inches below the surface of the border, allowing two or three inches for settling. When it is thus placed, and whilst the stem is bare, let a slit be made below each bud, beginning about an inch from them, and making it up to the buds; the buds which are to be treated thus, are those three that are at the low side of the stem, but the two remaining ones at the upper side must not be meddled with. In making the slit, cut into the shoot about one-third of its thickness. When the three tongues are cut, let a little of the soil be put between them and the other parts of the wood, so that the tongue will form an angle of 45 degrees with the stem. After this is done, the whole of the Vine outside the house may be covered up with fine compost as before described. In making the tongues, be very careful that the Vines are not broken, as they are very brittle. Water them when planted, and lay mulch over to the extent of the roots. The advantage of slitting the stem in the manner described is, that a great number of roots will be produced from each tongue, which, consequently, increase the number of feeders to the plant, and will contribute in a great measure to promote the vigour of the Vine. We have had Vines that made shoots the first season three to four inches in circumference.

As the Vines advance in growth, be careful to secure each lead to the trellis, that it be not broken, as it ought not to be stopped until it has reached the top of the house. When it has got to that extent, train it horizontally for about three feet, when it must be cut back so far, as to leave four or five buds upon that part trained horizontally; this will strengthen the upright shoot considerably. If a shoot pushes again, let it grow a foot or two, and then be cut back to within two or three joints of where it was stopped the preceding time. All *laterals* that are produced upon the Vine must be taken off when they have pushed about six inches in length. In doing this, pull them off backward from the bud. The reason for taking away the laterals is, that the natural fruit-bearing buds are frequently injured by their being left and pinched back once or twice during summer, as is the practice of many persons; so much so sometimes as to force the natural buds in a wrong direction, or even to destroy them by growing over. The reason of laterals being retained and pinched back as alluded to is, to prevent the natural fruit buds from prematurely pushing; but if the leading shoot be kept *growing forward* as directed, the buds will not either prematurely break or be injured, on the contrary will be a great deal bolder, and produce much finer fruit the ensuing year.

In pruning and training Vines, we have practised two methods. Under the first, the Vine produces its fruit principally upon *spurs;* but under the second, upon *long shoots* of the year-old wood. In pursuing the first method, there is a much greater number of bunches upon the Vine than in the latter; but under the second metho the bunches of fruit are considerably larger. The second method is the best to adopt when Vines are trained in a house where there are long rafters and rather narrow sashes so that as much light as possible be allowed for the collection of greenhouse plants. Bu when the rafters are rather short and the sashes wide, the mode of spurring is the most proper to be practised, because they can be allowed to spread wider on each side of the rafters, and when spurred they require a greater breadth than on the other plan. Never permit them to spread over all the roof, although they be spurred; but always leave a good space up the middle of each light, so that the sun will be admitted in order to bring the fruit to perfection, and sufficient light for the collection of plants.

Our first remarks are upon those Vines which are *spurred*. The method of treating the Vine during the first summer which is already laid down, is alike applicable to both the modes of treatment. We therefore commence with the first winter pruning, which must be done in November, providing the wood be ripe. Let it be remembered that late pruning of the Vine is injurious. If not done early in autumn, do not defer later than *six weeks* previous to the supposed time of the sap beginning to move.

First Year. Winter Pruning.—In pruning the shoots always cut about one inch above a bud, and so as to slope in the same direction in which the bud grows; the length at which the shoots are to be left must be regulated according to their strength. If the shoots are as much as one inch and a half or upwards in circumference, let them be cut back, so as to leave four feet in length of the new wood inside the house. But if the shoots are much less in circumference, let them be pruned down to two buds. As soon as the Vines are pruned, let those that are long enough to admit of it be loosened from the rafters, and be tied along the front of the house, as near to the bottom of the sashes as possible.

The border outside the house (as far as it is judged the roots of the Vine extend) must be covered six inches deep with rotted tanner's bark or littery manure; but previously to laying this upon the border, loosen the soil to the depth of two or three inches, but not more. The mulch thus laid must remain upon the border until the latter end of May, when it may be removed. The advantage of having recourse to this practice is, that those roots which run near the surface are protected and preserved from injury by frost. And when the Vines begin to push next spring, it is of great importance, in order that the roots may be as much as possible in a natural proportion of temperature with that part of the Vine inside the house. No fire must afterwards be admitted into the front flue, except just sufficient to keep out frost from the plants. The best method of preserving Vines through winter in future, and preventing them pushing too soon in spring, is to have them loosened from the trellis, brought down and tied together under the sashes at the inside front of the house, lengthways of it. When tied, a wooden case should be fixed under them, so as to exclude them from the warm air of the house; this will require a wood bottom and upper edge, to fit close to the sash bars. In order, then, to admit the cold air to the Vines, a pane or two of glass may be taken out. If towards spring it is desirable to retard them longer, place a piece of felt upon the glass over the Vines, so that the influence of the sun upon them may be prevented. Sometimes a provision is made in constructing the house by openings under the front cross-beam, or by having a part of the sash formed so as to take about a foot broad of each away, then to draw the branches through and secure them outside the house. When they are thus placed, it is essential that they be secured from *wet*, or the buds will be liable to injury from frost, etc.

The time of beginning to push the Vines the following spring must be regulated by the period at which it is desired to have ripe fruit, calculating sixteen weeks from the commencement of forcing to the ripening of the fruit; but the nearer it is to the period when the Vines *naturally* begin to vegetate, the more certain is an abundance of fine fruit to be obtained. If the border is not in a due moist condition, let it have a good watering with drainings from the dunghill, it will very much promote the shoots pushing well. This attention to watering must be practised occasionally, so as to keep the borders in a moist (but not wet) condition, until the fruit is half swelled, when it may be entirely given up for that season. If manure-water cannot always be had for this purpose, soft pond-water may be used instead. As soon after as it is remarked that the buds have begun to swell, let a little fire-heat be introduced, so as to raise the thermometer to 60 degrees. From the time of commencing the fire-heat until the bunches of fruit can be distinctly seen (which will generally be the case by the time the shoots are an inch or little more in length), the Vines must be sprinkled with water of the same temperature as that in which the house is kept. The sprinkling must be performed every day at morning, noon, and night. When done in the evening, let it be about half an hour before the sun leaves the house. The flue must also be regularly watered every morning and evening. As soon as all the buds upon the Vines have broken, let the Vines be tied up the rafters of the house, and the heat be then increased to 65 degrees. After the Vines are tied up the rafters as directed, they must only be sprinkled twice a week until the bunches come into bloom, when it must be entirely given up, but be resumed after the berries are set, by sprinkling twice a week until the berries are about half the size they will attain to, when it must be given up, otherwise they would be affected by mildew.

It will generally be the case that two or more bunches of fruit will show from every bud, but only one must be permitted to remain. Whatever fruit is shown upon the *uppermost shoot* must be pinched off, unless the Vine be very vigorous, in which case it may be left, as in the other shoots. In making choice of a bunch to remain, the lowest one is generally the best. When the shoots upon which fruit is retained have pushed forth so that two joints can be distinctly seen above the bunch, the top of the shoot must be pinched off just above the second joint, in order to divert the course of the sap into the bunch of fruit; if a shoot should push again from the top of the one thus stopped, let it be pinched back to its origin when it has got about six or eight inches long. After this second stopping it will rarely be necessary to be repeated, the fruit being then so increased in size as to require a great portion of support. Great care must be taken that the leaf (which is at the joint from which the bunch is produced) is not damaged, for if it be, the fruit will be injured. The necessity of stopping the shoot two joints above the bunch is, that the sap, when required, may have a channel to expend itself without causing any of the buds below the bunch of fruit to break this season, which would frequently be the case in vigorous Vines if the shoot was stopped at the bunch, which is the practice of some persons; but by stopping it as directed, a mean is provided to prevent the premature breaking of the buds below the fruit, whilst the part of the shoot retained above the bunch is not an encumbrance productive of any injury to the Vine or fruit whatever. When the bunches come into bloom the temperature of the house must be increased a little by keeping the house closed longer during sun, but admitting as great a quantity of air in mild days as possible, so as to regulate the house as described. This temperature of heat must be afterwards kept until the middle of June, when fire-heat may be given up, except a little occasionally, to dry up any damp. At this period the general collection of greenhouse plants will have been removed, and more heat may be allowed to the Grape. The thinning of the berries must take place as early as possible, doing it when they are the size of small garden peas. In doing this, great care must be taken that the berries which are to remain, and the stalks which support them, are not injured by the scissors with which the thinning is performed. A regular distribution of berries in every part of the bunch must be left. The distance at which they are permitted to remain must be varied according to the sort of Grape; those sorts which produce small berries must be left the rankest. Those bunches which have shoulders (such as the Black Hamburgh and others) must have them supported to the Vine or trellis, previous to thinning, by small strands of matting. This gives a great advantage to the swelling of the berries, and secures them from getting mouldy. All laterals, shoots, or claspers which are produced must be taken away, leaving about one inch of each *clasper*, but taking the *laterals* entirely away. The uppermost shoot must be trained up to the top of the house and then in an horizontal direction for a few feet, it must then be stopped agreeably to the instructions given for the first year. Those Vines which were cut down to two buds at the winter pruning must be regulated in the following manner. If both the buds pushed a strong shoot each, let the uppermost be taken clean away and the other be trained up the house, and afterwards treated as directed for young Vines the first year after being planted. At the following winter pruning the Vine must be shortened back to four feet, and in its future treatment be regulated agreeably to directions given for the other Vines which were allowed to remain four feet long at the first winter pruning.

Second Year. Winter Pruning.—When the Vines are pruned at this time, the lateral shoots, which will hereafter be denominated spurs, must be cut down to two buds, as Fig. 1, *a*, *a*, *a*. By shortening those spurs so much as directed, the Vine is kept in a vigorous state and the bunches of fruit will be considerably larger than if they were left longer. But it is necessary to leave two buds upon each spur, for it sometimes happens that one of the buds will not show fruit well, or may be damaged, but by reserving two, a supply is more certain. The leading shoot of the Vine must be pruned back so as to leave five or six feet in length of the last summer's wood. This must be regulated according to the length of the rafters. If the Vines are to be trained to the length of fourteen feet, it must now be pruned to five feet, and the year following to five feet more, when it will be at its desired extent. If the extent at which the Vines are to be trained be as much as seventeen or eighteen feet, let the leading shoot be pruned so that it may have a regular proportion left each year, and so as to reach one foot from the top of the house at the fourth winter pruning; at which length the Vine must in future be allowed to bear fruit. Any loose bark which there may be upon the Vine at winter pruning must be peeled off. After this is done the Vines must be brought down to an horizontal position as before. The bringing down of the Vines to this direction must be attended to so long as they will admit of it, as it greatly assists the regular breaking of all the buds at spring. The directions given for forcing are those proper to be pursued in every succeeding year, When the buds upon the spurs, *a*, *a*, *a*, have broken, and show good bunches of fruit, one only must be left to each shoot. If the uppermost bud does not show fruit, let it be taken entirely away; but if the uppermost bud shows fruit and the lowest one does not, both of them must be retained. The directions already given for stopping the shoots, taking away claspers, laterals, etc., must be attended to in every succeeding year.

Third Year. Winter Pruning.—Those spurs which had two shoots retained upon each during the last summer, must now have only the lowest retained, and each spur must be pruned off, as Fig. 2, *a*, *a*. The shoot, *b*, must also be cut down to two buds. This attention to keep each spur supplied with bearing wood as ***near to the main stem*** of the Vine as possible, must in every future pruning be strictly pursued. The leading shoot must now be cut off agreeably to previous instructions.

When the Vine comes to bear upon spurs quite to the top of the house, the leading shoot must be stopped in summer, and also pruned back in winter, in the same manner as is practised upon the spurs. When the top of the house becomes crowded, a portion must be taken from the end of the Vine by cutting away two or three feet of the old wood, and replacing it by a new shoot. When the Vines have been under this mode of training and pruning for ten or twelve years, the spurs will generally be rugged and longer than would be sightly or beneficial to the Vines, a renewal of wood will then be required. But this may in many cases be retarded for several years, for it will very frequently happen that upon the oldest wood of the spurs several buds will break, as well as the two buds reserved upon the shoot of last year's wood. When shoots are so produced upon the old wood, let all be rubbed off to one good strong one, when they are about two inches in length. The one retained must be allowed to grow to fourteen or sixteen inches in length, when it must be stopped, and afterwards kept at that length. When such spurs as are furnished with a shoot as described are pruned at the following winter, all that part of each spur above where the new shoot arises must be cut clean away, and the new shoot be pruned to two buds, as directed for the other spurs. However, when it is found necessary to have an entire new head, this is best effected by wholly cutting down the Vine, so as only to leave two or three buds inside the house. There are generally plenty of such buds situated upon the old wood at the bottom of the Vine. This practice is far preferable to that of training up a shoot from the bottom a year or two previous to the time it is designed to cut down the Vine; for in that case the shoot cannot always attain sufficient strength to enable it to produce fruit as it ought to do for the first year or two after heading down, by reason of having to support spurs and fruit at the same time the shoot is coming on, and upon which you are to depend for a supply. But when the Vine is cut entirely down, it will make a vigorous shoot which will bear abundantly the second year. In pruning the shoot produced by heading down, let it be cut at the first winter pruning, so as to leave it six or seven feet long; and at the second winter pruning in proportion to its strength: the future treatment of them must be as directed for young Vines.

The other mode of treating Vines, viz., the long shoot system, is as follows:—The Vines are planted in the manner already described, and the treatment of them for the first summer is in *every respect* as for Vines trained to bear upon spurs, also placing them in a horizontal position along the front of the house during winter, etc.

First Year.—Winter Pruning.—It will occasionally happen that some of the Vines will grow a great deal more vigorously than others. In pruning them at this time they must be treated according to their strength. If the shoots be so strong as to be two inches in circumference let them be shortened so that four feet of each shoot remains inside the house. But if the shoots be much less than two inches in circumference, let them be cut down so that only two buds be left upon each Vine inside the house. After being thus pruned, the Vines will require in every other particular the treatment before directed. When the Vines push at spring, those which were pruned to four feet in length may be allowed to bear fruit this summer; but those which were cut down to two buds must not be permitted to bear any until the third summer from planting. Upon those Vines which are to bear fruit, every bud will generally show two or more bunches; but only one to each bud must be suffered to remain, with the exception of the uppermost and lowest shoots upon the Vine, both of which must be entirely divested of any fruit which may be upon them, as they are to be trained, in order to furnish wood to bear another season. The uppermost shoot must be allowed to grow to the top of the house and a little in an horizontal manner, and then must be stopped as directed before. The lowest shoot must be permitted to grow to the length of seven feet, and must then be stopped by cutting off the top so far back as to leave it only five feet long. By cutting the shoot so far back, it will be considerably more strengthened than if the top of the shoot had been pinched off when it had reached the length of five feet; because in the former case, the wood having attained a little hardness, the buds will not push a new shoot so soon as where the shoot is very tender, as in the latter case; thus a greater space of time is afforded for the strengthening of the shoot. The shoot thus stopped must be kept at this length by stopping the new shoot after it has pushed a few inches; this must be repeated as frequently as required. Those shoots which are allowed to bear fruit must be stopped at the second joint above the bunch as soon as two joints can be distinctly seen, and when they push again, they must be permitted to grow a few inches, and then be pinched back so as to leave one bud upon that part of the shoot which pushed the last; this must be repeated as frequently as required. Those shoots must regularly be tied up to the main stem of the Vine, so that they may not crowd each other, and on the other hand, not shade more than can be helped such trees or plants as may be underneath them. All claspers and laterals must be taken off in the manner already described. If both the buds pushed a shoot of those Vines which were, last winter pruning, cut down to two buds, let the uppermost be stripped off, and the lower one be trained up the rafter; and afterwards treated in every respect as directed for those which pushed vigorously the first year after being planted.

Second Year. Winter Pruning.—Let the leading shoot of those Vines which produced fruit be shortened, so that six feet of the wood made last summer be left, as Fig. 3, *a*. The lowest shoot must be pruned down to four feet, as *b*, which will be opposite to where the leading shoot was cut to the first winter pruning. By shortening the shoots as here directed all the buds will generally push strong shoots, and show good bunches of fruit the spring following; whereas if they had been left two or three feet longer, it would be uncertain whether some of the buds at the lower part would push shoots, which if they did would be weakly. But every desired advantage both as to fruit and wood is obtained by pursuing the directions given. All those lateral shoots which produced fruit, as *c*, *d*, must be cut clean away to the stem which they proceed from. The following summer the Vines will bear fruit for the length of ten feet, and two bunches of fruit may be allowed upon each bud; all others must be pinched off. Each uppermost new shoot upon the shoots, *a*, *b*, of the last year's wood must not be permitted to retain any fruit whatever, but the uppermost new shoot upon the shoot *a* must be trained to the top of the house, and be stopped as before directed. Also the uppermost new shoot upon the shoot *b* must be allowed to grow to nine feet in length, and then be stopped by cutting away two feet off the end, at which length it must afterwards be kept during summer. It will generally happen that there will be several buds break from the oldest wood of the Vine, and very near to the bottom, in which case a shoot must be retained and trained up at the opposite side the main stem of the Vine to the shoot *b*; all other shoots which arise near to the origin of this must be rubbed off when about one or two inches long. If a shoot does not proceed from the old wood, the lowest new shoot upon the Vine must be trained in for the same purpose. This shoot must be allowed to grow about seven feet long, and then be stopped by cutting off the top to five feet, as before directed, to the lowest shoot last year.

Third Year. Winter Pruning.—The uppermost shoot or lead of the Vine must now be cut off so as to leave six feet of the wood made last summer, as Fig. 4, *a*. This will very probably be near the top of the house; if it should be so, a foot longer or shorter may be allowed, so that the Vine answer the desired end in coming as high up as wanted, which ought to be about fifteen or eighteen inches from the top. The second shoot upon the Vine must be cut back so as to leave six feet of the new wood, as Fig. 4, *b*; and the lowest shoot be pruned down to four feet, as *c*. All lateral shoots (whether they bore fruit or not last summer) must be cut clean away, as *d*, *d*, *d*. When the Vines break the ensuing spring, they will have three different bearing shoots, as *a*, *b*, *c*, which will probably extend to the top of the house, being sixteen feet in a bearing condition. The uppermost shoot upon the Vine must this summer be allowed to retain two bunches of fruit, the same as all other bearing shoots. The bunches being retained upon the top shoot prevent its growing so vigorously as it otherwise would. The top shoot must be stopped in the same manner as all other bearing shoots. The top buds upon those two shoots which supply fruit at the lower part of the Vine, as *b*, *c*, must not have any fruit left upon them, but be trained up to furnish wood as already directed. Another shoot must this summer be trained up from the bottom of the Vine (from the old wood, if possible, otherwise as low down as it can be had); this shoot must be treated according to previous instructions. It is desirable that it should be trained up the opposite side of the Vine from the last shoot trained in.

Fourth Year. Winter Pruning.—The shoot which bore fruit to the top of the house must now be cut entirely away to the bottom of the Vine, as Fig 5, *a*, close to the point from which the next shoot in length proceeds, as that is to supply the place of the one taken away, and must be shortened to the extent the Vine is to bear, as at *b*. All the other shoots must be pruned off at their respective lengths, agreeably to the instructions previously given; also all the lateral shoots must be cut clean away, as before directed. When shoots are produced upon the old stems from which the lateral shoots were cut away, if they are not wanted for a supply of wood, let them be rubbed off when they are an inch long. This treatment of the Vine may be practised for a great number of years, and under it will always be properly furnished with wood and be in a good bearing condition. The principal object is to obtain a supply of young wood as *low down* the Vine as possible. When, through weakness, it is deemed necessary to renovate the Vines, they must be cut entirely down to one or two buds, and afterwards be treated as young Vines. The Vine border must also be renewed when required, by an addition of fresh soil and manure, in the same proportion to each other as directed for a new border. In performing this, begin to open a trench at six feet from the house, to the *front* of the border, and be careful not to bruise or break more roots than cannot possibly be avoided. Take a considerable quantity of the old compost entirely away, and substitute new instead of it. Lay the roots of the Vines carefully upon the soil in a proper direction, placing them eight or ten inches higher than they were before, in order to allow for settling, so that when the border sinks they may be at their proper level with the other roots which were not disturbed. Such a renewal of the border should always take place about the time when the Vines are pruned at autumn.

In our remarks on the formation of the Vine border, we have been particular as to the necessity and advantage of having it well drained, and the plan we detail having been adopted in many very wet and, of course, unfavourable situations, has fully answered every desired purpose of keeping the compost of the border sufficiently dry, preserving it from all excess of wet. Some persons, however, have been at the expense of constructing cold air drains, or chambers, the top of which being supported on pillars, formed the floor for the compost. In addition, the surface of the border has had a covering of glass to protect it from excess of rain, etc., the sashes of which were moveable, and could be taken away at pleasure in spring or other period. When early ripe grapes were required, forcing had, of course, to be commenced at a proportional early period of winter, when the soil of the border was at its *extreme of cold*, and the heads of the Vines being introduced into the house, where a high degree of temperature is necessarily requisite, they are placed in the extremely injurious circumstances in which a man would be if exposed to a *hot steam bath* whilst his feet were imbedded in ice. In order to prevent the evil which would certainly ensue, means have been employed to warm the border, by having a hot-air chamber underneath; and thus have the temperature of the soil and the house at a degree of due equality, and the very best success has resulted where the system has been put in practice. Perhaps some of our readers may be led to adopt the principle in whole or in part, we have therefore given some engraved illustrative figures of a Vinery having the border chambered, and warmed on the hot-water-pipe system. (See annexed plate.)

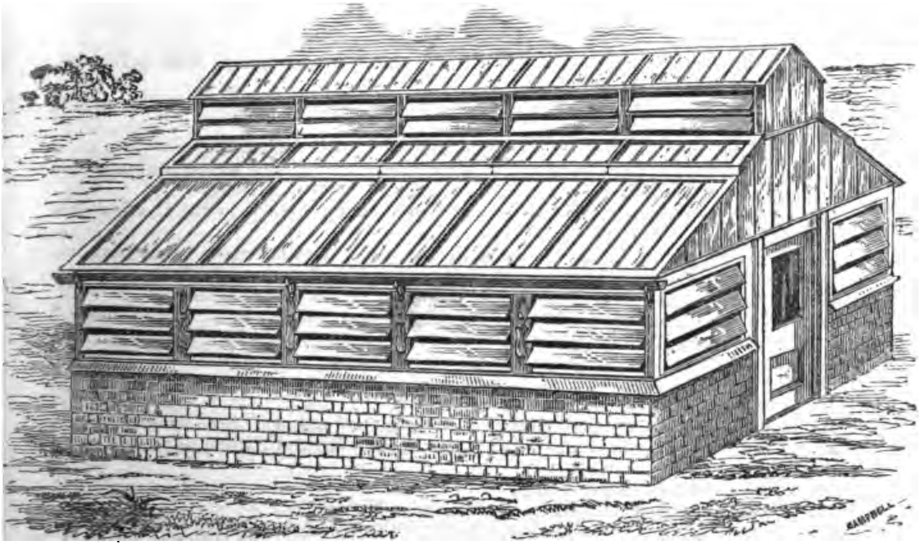
Reference to Section.—Fig. 6: *a* shows the Vinery chamber, hot-water pipes, etc.; *b*, cistern; *c*, boiler; *d d*, air-circulating pipes; *e*, the flow pipe into the chamber; *f*, the return pipe from the chamber; *g*, surface of the border.

Fig. 7, *Ground Plan: a b c d* shows the chambered vault in which are the square pillars for supporting the pavement, whether it be of thick slate or other material, and the direction of the hot-water pipes proceeding from the boiler across the house and border to the front, and, after making the circuit of the border, returning again to the boiler; *e*, stoke-hole, furnace, and boiler.

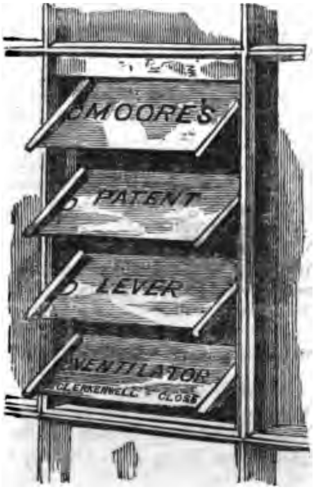
SYRINGING THE BUDS.—Whilst the Vines are in the horizontal position, along the front of the house, with a view to retard their pushing, and at the same time contributing to the more general breaking of the buds—at the same time, too, it will essentially promote this to syringe the branches three times a day, commencing as soon as the buds appear to be rising, and continue till they have pushed shoots an inch long, then the Vines must be secured up the rafter trellises.

INSECTS.—The red spider is partial to Vine-leaves, and their ravages at the under side of the leaves are soon apparent by their becoming brown. In this case, mix some common sulphur in whitewash, and apply it to the flue; where practicable, have the flue gently warmed, but so as to cause a fume for a short time from the sulphur: this will soon destroy every insect. If the attack has been confined to a solitary Vine, a portion of the mixture placed upon a warm metal plate, and held underneath the Vine at a suitable distance, will answer the desired purpose. In each method of application, care must be taken not to have either the flue or plate hot, but warm; a fume of vapour from the sulphur must be produced, and that can only be but from fire-heat. If mildew appear on the leaves, shown by dark spots, sprinkle over and under with dry sulphur. At the time the Vines are loosened for tying them across the front of the house, strip off all loose bark, and with a brush lay a liberal portion of the following liquid mixture:—To one quart of strong tobacco-water add one gill of weak gas-water, one quart of strong soap-suds made of the common soft soap, and a gill of common sulphur. These must be well boiled together, and, when cool enough, applied to the Vines. It will destroy the larvæ of insects. Where Vines have been severely attacked by red spider, at the time of pruning in autumn take out the stock of plants, and fill the house with a strong fume of heated sulphur for a few hours; this will not injure the branches of the Vine, but the impregnated air will destroy every insect it reaches.

VENTILATION OF STOVES, GREENHOUSES, ETC.



THE ventilation of such structures, whether for the purpose of cultivating in them fruits or flowers, has, till lately, been both much neglected and little understood, although a proper *Ventilation* is the most important requisite in their construction. Ventilation is founded upon the simple principle that cold air is *heavier*, and has a tendency to sink downwards, whilst hot air is *light*, and rises to the top. At first sight it may appear that it is only necessary to have openings at the top and bottom, for the air to enter below and escape above; but, practically, proper ventilation is not so simple an affair as supposed by some, and it has been found difficult to cause currents of air to obey our will, and take their course through the structure with the velocity desired. The best system of Ventilation we have seen, being both *correct* and simple in principle, and also completely effective, is MOORE'S PATENT LEVER GLASS VENTILATOR. We have seen it in use at Messrs. Veitch's Nursery King's Road, Chelsea, and is highly approved of by Mr. Veitch. In appearance it is very neat, readily worked, and its action so admirably arranged that it is scarcely



possible to get out of order, whilst at the same time air can be admitted even in wet and boisterous weather, without injury to the plants or fruits. The Ventilators can be readily fitted to stoves, greenhouses, etc., already erected. The annexed plates will illustrate in some degree the system of Ventilation, and show in what way the advantages are realized. Any ordinary workman can readily fit them where required.

AUTOGRAPHS OF EMINENT GARDENERS & NATURALISTS.

(*See Plate.*)

1. *Philip Miller*, the author of the "Gardener's Dictionary," and for many years Curator of the Botanic Gardens, Chelsea. Died Dec. 18, 1771, aged 80.
2. *Batty Langley*, of Twickenham, author of several works on laying out grounds and improvements in rural affairs, who flourished in the early part of the last century.
3. *Dr. Daniel Solander*, a native of Sweden, selected for his eminent abilities to accompany Captain Cook in his voyage round the world, as naturalist to the expedition.
4. *Sir John Hill*, author of "The British Herbal."
5. *Thomas Pennant*, an eminent naturalist of the last century.
6. *Peter Collinson*, a great patron of gardening and botanical science. Born in London, 1693, and died Aug. 11, 1768.
7. *Carolus Linnæus*, the well-known reformer of natural sciences, and founder of the Linnæan system of botany.
8. *Mr. Curtis*. the nurseryman, and originator of the "Botanical Magazine."
9. *Sir Hans Sloane*, one of the most ardent collectors of plants and other specimens this country has produced, and founder of the Botanic Gardens, Chelsea.
10. *Joseph Sabine*, one of the founders and some time secretary to the Horticultural Society of London.
11. *John Evelyn*, author of several gardening works, and known as an enthusiastic gardener of the seventeenth century. Born Oct. 31, 1620, died Feb. 27, 1706.
12. *Latreille*, the French entomologist; originator of the "tarsal system."
13. *Francis Willoughby*, the friend and patron of Ray, and author of "Ornithology."
14. *J. C. Loudon*, the well-known author of the "Encyclopædia of Gardening," etc., and for many years conductor of the "Gardener's Magazine." Born in Scotland, April 8, 1783, died Dec. 14, 1843.
15. *Tournefort*, the eminent French botanist.
16. *Sir Joseph Banks*, a great patron of gardening and science. Died June 9, 1820.
17. *Thomas Bewick*, the engraver and author of the "Natural History of British Birds and Quadrupeds."
18. *Cuvier*, the French naturalist.
19. *Buffon*, author of the well-known "Histoire Naturelle."
20. *A. G. Werner*, the mineralogist, founder of the Wernerian system.
21. The *Abbé de St. Pierre*, a French natnralist, author of several delightful works.

We regret that space does not allow of a more extended notice of some of the above worthies.

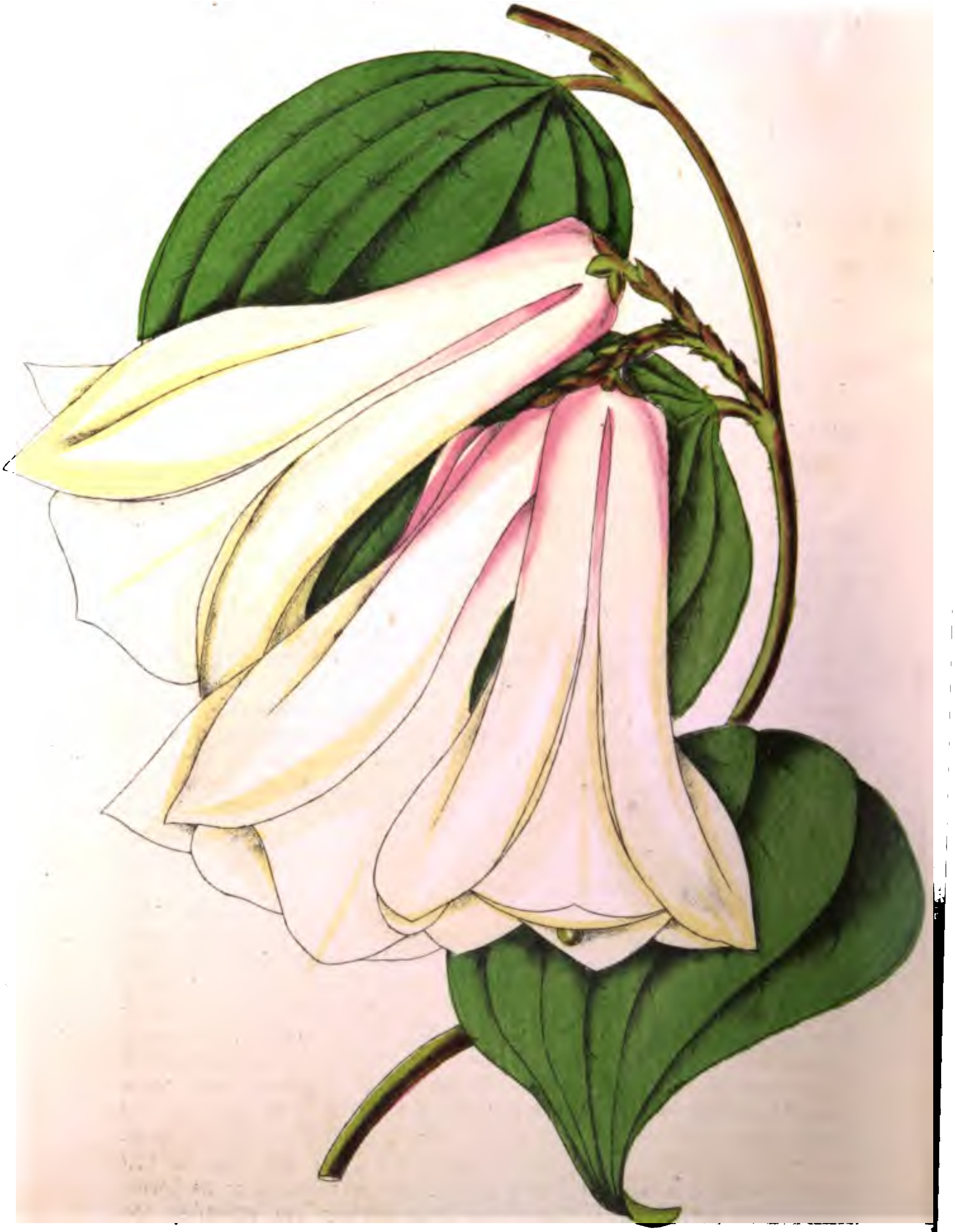
SUPERB FUCHSIAS.—Dark coloured tube, sepals, and corolla—Banks's Prince Albert, B. Favourite, B. Beauty of the Bower, B. Omer Pasha, B. Grand Sultan, B. Autocrat, Climax, and Hendersoni, which has a double corolla. Light coloured tube and sepals, with a scarlet or other rich-coloured corolla—Henderson's Duchess of Lancaster, B. Maid of Kent, Lady Franklin, Queen of Hanover, Standish's Perfection, Dender's Princess of Prussia, Onega, B. Clio and Thalia.

Striped corolla—Dubous's Imperatrice, Eugenie, Story's Perugino, S. Raffaelle.

New white corollaed—Tube and sepals rich coloured, and corolla white—Galanthiflora, plena. Corolla double, like a snowdrop, white—Story's Ranunculiflora. Corolla double, white—S. Queen Victoria, S. Mrs. Story—S. Empress Eugenie, S. Lady of the Lake, and Rouge et Blanc.

Globe flowered—S. Water Nymph. White corolla—H. Globosa perfecta, K. globosa magnifica, Bornossia, and Arthur de la Perle.

FINEST SHOW HOLLYHOCKS. - Pourpre de Tyre, Lady Braybrooke, Lizzy, Princess Alice, Walden Rival, Mr. Adams, Emperor (Rooke's), Louis Napoleon, Jenny Lind, Mont Blanc, Hon. Mrs. Ashley, Beauty of Cheshunt, White Globe, Sulphurea perfecta, Pearl (Chater's), Hedenham Rival, Julia Chater, King of Yellows.



LAPAGERIA ROSEA, *var.* ALBIFLORA

The Floricultural Cabinet.

FEBRUARY, 1856.

ILLUSTRATION.

LAPAGERIA ROSEA, var. *albiflora.*

This *genus* was named in compliment to Josephine Lapagerie, wife of Napoleon Bonaparte, who was a great encourager of botany, and the cultivator of flowers in the beautiful gardens of Malmaison.

The *Lapageria rosea* is a native of Chili, from whence a plant was received into the Royal Gardens at Kew, in 1847. In June 1850, we gave a figure of it in this Magazine. Ruiz and Pavon in their description of the plants of Peru and Chili, state they had observed that the flowers vary from "rose to rose-crimson." In 1852 M. Van Houtte, in his Catalogue, describes a *white-flowered Lapageria*, and offers plants for sale, at 300 francs each. A healthy plant of *Lapageria* was sent from Chili, by M. Abade, to Professor Decaisne, at the Jardin des Plantes at Paris, where it has blossomed, producing large flowers, white, slightly tinged with a cream colour, and towards the base with a delicate blush. The flowers are borne in drooping heads of two or three blossoms in each. It is a half-shrubby climbing plant, the flowers being larger than those of *L. rosea*, and is a charming companion thereto. For some time after its introduction the *Lapageria* was found difficult to manage, and more especially so, when it was treated as a stove plant.

The history of the artificial treatment which many of our well-known plants received when first introduced, and their habits were little known, would afford some curious and instructive details for the gardener. It has hitherto been, and continues to be, too much the practice to consider every rare and valuable plant, upon its first arrival, to be tender, and thus to force upon it a treatment directly opposite to what it in reality requires. In this way many a beautiful plant has languished for years comparatively unknown, until some lucky accident or fortunate neglect has enabled it to develope its true character, and to indicate to the cultivator the exact treatment it required. The plant, whose name gives the title to this paper, seems in a fair way, like a host of its predecessors, to be persecuted with kindness. Hitherto but little success has attended the attempts to cultivate it among the few who are fortunate enough to possess it. But now that a large number of strong plants has reached this country, there is a chance of its becoming still better known; and doubtless the well-known skill of English gardeners will soon succeed in developing its beauties. That its attractions are great there can be no doubt; and there is much probability of its proving hardy with us, at least in the more favoured parts of England. It is a native of a climate where the temperature rarely rises above sixty-five degrees. Its habitat is moist, shady woods, where it scrambles among the under-growth, and climbs about the boles of trees; for it is a climber, with dark green leaves, resembling in appearance a Smilax (one of which we figured in our last number), to which it is allied. Its roots are thick and fleshy, like those of the Asparagus. In the flowers, however, consists its great beauty. They are bell-shaped pendants, of the richest and deepest rose colour, and measuring some four inches across—a glowing description truly, but a correct one. Now a word or two about its treatment. Up to the present time failure has been the rule with those who have attempted its culture. Let us endeavour to investigate the causes, and to ascertain the treatment its nature and habit require. Growing naturally in cool, moist, and shady woods, it was scarcely to be expected that when placed in an artificial climate of a directly opposite character, viz., a high and airy temperature, with a strong light, it would exhibit its natural health and vigour. On the contrary, it did exactly what any other plant of a similar nature, and under a like change of condition, would do—it cast its leaves, and otherwise indicated its repugnance to its altered circumstances. If the several attempts that have been made to cultivate it are investigated, it will be found that in proportion as artificial heat has been employed, and strong light permitted, so has failure resulted in an equal ratio. The natural conditions under which it flourishes clearly furnish data upon which to found its artificial management; a cool, moist, and shady situation must be afforded it; strong light it abhors, the direct rays of the sun especially. In an ordinary plant-stove it has proved altogether uncultivable; in a warm greenhouse it has languished; *while in a cool and shady one at Kew* (the temperate fern-house) *it succeeds most admirably*. From the nature of its roots, it is doubtless a plant tenacious of life, and not easily destroyed under ordinary treatment; but, like many other fine plants, it requires peculiar culture for its perfect development; that having been ascertained, we may now expect to behold its noble blossoms developed in our gardens as in its native woods on the mountains of Valdivia, and the neighbouring countries. And of its hardiness in the open air in this country, if a *proper mild situation* be selected, and established plants employed, there is (judging from the physical character of its native country) every probability. In addition to the local conditions—the shade of the woods under which it luxuriates—moisture and medium temperature are prominent features of the tract of country it inhabits. Many parts of Great Britain possess similar characteristics in a corresponding degree. The plant wants damp shade, and a mild climate. During the early part of last year a correspondent wrote us—"I have succeeded in raising a few berry-like pericarpiums of seeds in 1853, which remained on the plant *all winter*, and ripened during the last summer (1854). I immediately sowed a portion of the seeds, which to my joy have vegetated, and afford me the prospect of securing plants." The seeds are of a globular form, and semi-transparent."—*Amicus, Rosemont Gardens, Liverpool*

REMARKS ON THE MANAGEMENT OF MESEMBRYANTHEMUMS.

BY JOSEPH HARTLEY, ESQ., AN OLD AMATEUR PLANT-CULTIVATOR, FLORA VILLA, BIRMINGHAM.

WHENEVER a subject of floral interest presents itself to my notice, it affords me much pleasure to be able to offer a few remarks upon it; and my attention is now directed to the extremely beautiful though little cultivated genus, *Mesembryanthemum*, having a bed of them growing in the open ground, under a south aspected wall, and which, during sunny days, compose a blaze of beauty. Besides which I grow 200 plants in my greenhouse. There are upwards of 300 distinct species and varieties grown in this country, and I possess 162 of them in my collection, all of which possess some peculiar claims to beauty and interest, both in foliage and flowers. Producing annually an immense number of flowers of the most brilliant colours, and yet of the most extensive variety, having thick, fleshy foliage, of a most singular and interesting character, and being besides most easily cultivated, this beautiful genus appears to me to possess charms and merits of a more than ordinary nature; and I am at a loss to imagine how many cultivators can willingly neglect, or wilfully despise a genus of plants which certainly deserves to rank amongst the most pleasing and delightful of nature's productions.

These plants require a great degree of solar light; and though this may safely be said to be one of the most important features in their cultivation, there are other particulars which require equal attention and consideration. It is generally believed, that if these plants are placed in a poor and sterile soil, they may be induced to flower more profusely, and that the flowers will be finer and of better colours. To a limited extent this notion is correct; but it is a great error to suppose that this treatment will of itself be sufficient to produce the effect above mentioned. It is also imagined that, by withholding water from these plants for a time, their flowering may be facilitated, and the flowers rendered finer and more abundant; this is likewise to a great extent an equally erroneous hypothesis, if the success be attributed to this treatment alone, as may be sufficiently proved by placing the various species of this genus in a sterile soil, administering water very sparingly, or wholly withholding it for a time, and keeping them in a shaded or gloomy situation, where the rays of the sun can never reach them; the result of which will be, that they will either produce few and insignificant flowers, or be altogether destitute of them. But if, instead of being kept in this unfavourable position, they are placed in an open and exposed situation, where they can receive a great degree of solar light, I find they will speedily produce a most brilliant display of flowers, and these will continue expanding for a great length of time. It therefore plainly appears that it is the *influence of light* which causes these plants to flower so profusely, and not the nature of the soil or the quantity of water administered; though these latter doubtless contribute in some degree to produce the above desirable effects. Indeed, this must be abundantly evident to every intelligent cultivator who has been accustomed to place these plants in the open air; for it is irrational to suppose that poverty of soil or scarcity of water alone would cause them to flower so freely. *Mesembryanthemums*, like most other succulent plants, I find require a great degree of solar light to enable them to produce their flowers in perfection; and whether they are kept in the greenhouse or in the open air, this important particular, in order to success, must be duly and properly attended to, otherwise disappointment will follow. During the summer months, however, many of the species will flower better in the open air than if kept in the greenhouse, as in the former situation they receive a far greater degree of light.

I use a rich, light loam, with a slight mixture of very rotten dung, and a trifling admixture of lime-rubbish with the above, or a good proportion of river or white sand, which is very necessary, if not essential, to cultivate, or at least to flower, these plants in a superior manner. With respect to the quantity of water which they require, I am averse to administering to them too large a supply at any time, but more especially in the winter; and am of opinion, that so long as they are kept from withering or shrivelling, they cannot be too sparingly watered at all seasons; an attention to which point doubtless contributes to increase the number of flowers.

They may all (except a few species which are of only annual duration) be propagated by cuttings, which should be taken off from the extremities of the young shoots about the month of May, or from that time till the month of August; and, like those of most other succulent plants, they require placing in a shady, dry situation for a few days, till they begin to shrivel, when they may be planted numerously into shallow pots, in a very light sandy soil, with an abundance of drainage materials in the bottom of the pot. They should be placed in a slight, dry heat, and carefully shaded from the sun till they have struck root, watering them occasionally, but with caution, as they are very liable to rot when any superfluous moisture is collected about them. When struck, they may be potted singly into very small pots, in a compost of one-half light loam, one-fourth well-decayed manure, or leaf-soil, and one-fourth, or less, of lime-rubbish broken fine, and sand, placing them in the coolest part of the greenhouse, watering them sparingly, and keeping them as close as possible to the glass, so as to receive the full benefit of solar light. When the roots appear to have filled the pots, they must be repotted into pots of a larger size, in a similar compost; and during the whole period of their growth it is important that they should not be allowed too much pot-room, as they usually become straggling and unsightly if they are stimulated or suffered to become too large.

Plants raised during the summer of one year are suited to plant out into the open ground in the spring of the ensuing season, or they may be allowed to remain till they are two years old before they are thus treated; for they invariably flower better when they are well established. The situation chosen for them should be a border, with a southern aspect, as they delight in receiving the full influences of the sun, and indeed their flowers will seldom expand unless the sun is shining on them; the border should be slightly elevated above the surrounding surface, for the purpose of preserving the plants from superfluous moisture; and the sub-soil should, if possible, be firm and hard. I annually plant out a number of these plants in a small border in the front of an ornamental stove, and in this situation, being fully exposed to the sun, and on a rather rocky sub-soil, they flower most beautifully and profusely, the soil of the border being very similar to that before recommended, but with a less proportion of sand and lime-rubbish. A rockery with a southern aspect is likewise a most excellent situation for them, in the crevices of which they may be inserted in a soil introduced for the purpose, and they will there be effectually preserved from any superfluity of moisture. But they will seldom be found capable of enduring the open air throughout the whole season in this country, and therefore it is necessary to remove them from the ground in the autumnal months, and place them in pots of a sufficient size to be kept through the winter in the greenhouse, or succulent house, with very little water, and a temperature just high enough to exclude frost. They should never be pruned, for when they become old and straggling it is better to throw them away at once, having previously raised a stock of young plants to supply their place.

The annual species require very little attention, as it is only necessary to collect the seed as soon as it is ripe, and sow it in a very light soil, keeping it in an airy part of the greenhouse till it vegetates, and afterwards potting the young plants singly into small pots, and treating them according to the preceding directions with regard to soil, situation, and water.

Thus treated, there are few plants which reward the cultivator with a greater profusion of showy blossoms of the most lovely and brilliant colours than the numerous species and varieties of this genus, and they are equally within the reach of the nobleman and the amateur, and may be successfully cultivated in the garden of either, provided due attention is given to the subjects of light, soil, and watering, as here detailed.

GREENHOUSE CLIMBING PLANTS.

BY AN AMATEUR CULTIVATOR IN SOUTH DEVON.

In a recent number of the *Floricultural Cabinet*, a correspondent requires an answer on greenhouse creepers; I therefore take the liberty, through your widely circulated and intelligent publication, of forwarding a descriptive list of such as I grow—this section of plants (climbers) being a great favourite of mine—as well as an attempt to make a small return for the useful knowledge many others have afforded me in this Magazine.

The following kinds are handsome, as well as free bloomers:—

Tecoma spectabilis. The rich green shining foliage, and its large, waxy-white, funnel-shaped flowers, with a crimson eye, render it a charming plant. The panicles of flowers hanging down are exceedingly pretty.

Bignonia grandiflora is a climbing shrub, growing ten or twelve feet high, but it commences flowering when two or three feet high; its flowers are produced in panicles, each flower being two and a half inches across, and of a deep red colour. It was introduced from Japan many years ago, and should be grown in a border or a large pot, in a rich loamy soil.

Clematis azurea grandiflora is a beautiful flowering plant; its flowers are of a pale violet colour, four inches across. It may be cultivated in a pot or border of loam and peat. It flowers in April and May; introduced from Japan in 1837.

Clematis florida bicolor (Sieboldii) is a beautiful showy flower, which is of large size, and of a greenish-white colour; it has an Anemone-like centre of a dark purple; this and the last species are hardy, but well deserve their room in a house. It blooms in April and May; a native of Japan.

Hoya carnosa is an old plant, but *pretty*, and free to cultivate in a pot or border; it resembles an Asclepias (it is commonly called the Wax Plant). It flowers throughout the entire summer.

Kennedya rubicunda is a rapid grower, and will not display its beauty except in the greenhouse border. Its flowers are of a dark red, and plentifully produced, in April and May. It is a native of New Holland, and delights in a sandy peat soil, with plenty of drainage.

Kennedya Marryattiana. This is a dwarfer species than the last, and may be cultivated in a pot of peat and loam; its flowers are of a crimson-purple colour. It is a native of New Holland.

Kennedya coccinea is a small and pretty species for pot cultivation; it grows and flowers freely in sandy peat well drained, blooming in April, May, and June. A native of New Holland.

Kennedya glabrata. This is a neat and handsome species, and may be cultivated very successfully in a pot of sandy peat. Its flowers are produced in spring, of a fine crimson colour. A native of New Holland.

Kennedya monophylla produces an abundance of blue flowers in racemes; it should be grown in a border of loam and peat; it grows eight or ten feet high. A native of New Holland.

Kennedya monophylla longiracemosa. The same as the last, but its flowers are of a lilac colour.

Loasa lateritia is a plant of rough appearance, but deserves cultivation for its easy culture and showy flowers. It may be cultivated successfully in a pot of rich loam; it blooms all the summer. Introduced from Tucuman.

Lonicera Japonica is an evergreen Honeysuckle, producing a sweet odour, and an abundance of pale yellow flowers; it grows eight or ten feet high, blooming from June to September. It is a native of Japan.

Passiflora Decaisneana. This new and splendid species was figured in this Magazine in January, 1855. I obtained a plant, and it bloomed admirably in my greenhouse last summer. Its rich crimson blossoms, adorned with its numerous blue and white thread-like parts of the nectarium, are exceedingly handsome. It grows rapidly and blooms freely.

Passiflora filamentosa. This is a neat and pretty species; flowers of a light purple, blooming all the summer; it delights in a rich loam and peat soil. A native of America.

Passiflora incarnata is a free-blooming species, the flowers are flesh coloured. This and the last-mentioned species should be cultivated in the border, in order to succeed well.

Passiflora Kermesina is a small and beautiful species, requiring a warm greenhouse; it delights in a rich loam and peat soil, well drained. Its flowers are of a fine rosy crimson colour.

Philibertia grandiflora is a neat and curious little climber for a pot; its flower are greenish-yellow spotted with purple, blooming from May to July; it delights in a rich loam and peat soil.

Thunbergia alata may be trained to a circular trellis four feet high; its flowers are of buff colour, with a dark purple eye, and are produced all the summer. A rich loam suits it best. The *T. leucantha,* white, with dark eye, and the *T. aurantiaca,* of a fine orange, with dark eye and large flower, alike deserve a place in every greenhouse.

Tropæolum tricolorum is one of the most beautiful creepers in cultivation; it may be grown in a pot of sandy loam, and be trained to a trellis. To prevent drought injuring its roots, its pot should be placed in a larger one and filled round with damp moss or sand; it flowers all the spring and summer. Introduced from Peru.

Tropæolum brachyceras is a plant of the same habit as the last mentioned, and requires the same treatment; its flowers are yellow, and blooms all the spring and early summer months.

TREATMENT OF CHORIZEMAS.

BY MR. FANSHAW, A FORTY YEARS' PLANT-CULTIVATOR IN LONDON.

This genus is generally considered difficult to cultivate, but I have grown them with considerable success by pursuing the following method. The soil I use is a sandy, fibrous peat, well broken with the spade, but not sifted. The best time for potting is March or April; care must be taken not to over-pot the plants, or injure the roots while potting, and the soil must be made perfectly firm and compact about the roots, and the pots well drained; they must then be placed in the greenhouse in an open, airy situation, and not crowded among other plants. It is also preferable to keep them in the greenhouse during summer, but in hot weather they must be shaded for a few hours each day during sunshine. They require a reasonable supply of water; that is, they must not be sodden nor left to get too dry. They may be propagated in the following manner. Cuttings should be taken off while the wood is young, and carefully prepared; take off the bottom leaves with a sharp knife, and make a clear cut just through the joint; the cutting-pot should be drained, and then filled to within two inches of the top with the soil before spoken of On the top of this put a layer of white sand, into which plant the cuttings, making a little hole for their reception with a small stick. When the pot is full, give them a steady watering with a fine rose, after which place a clean glass over them. In this state they may be removed to the propagating house, where the temperature should be about 65°, and plunged in a little sawdust or sand. They should be shaded from the sun, which can easily be done by placing a sheet of coarse paper over the glasses. As soon as the cuttings are rooted, which may be known by their beginning to grow, they must be potted off, taking care not to injure the roots, and they must be covered again for a week or fortnight, till they make fresh roots, after which they must be gradually inured to the greenhouse, and treated as old plants.

CULTURE OF DOUBLE ANEMONES.

BY MR. JAMES SMITH, AN AMATEUR MIDLAND FLORIST.

In a late number of the *Cabinet* a correspondent wishes to know the soil most suitable for Double Anemones. Having been very successful in the cultivation of that beautiful class of plants, I beg to offer my simple method of culture. About the beginning of October I well dung my bed, which is a strong loam, with the dung from an old hotbed; I then dig it to the depth of eight or nine inches, mixing the dung well with the loam. I then cover my bed with a mixture of half light vegetable soil and half sea sand. I plant the roots about six inches apart and two inches deep. In March, if the weather be dry, I water the bed with manure-water. By this simple method I never fail in having a splendid bloom of fine Double Anemones.

DESTROYING THE RED SPIDER IN PLANT STOVES, GREENHOUSES, ETC.

BY A PRACTICAL GARDENER.

As far as my knowledge extends, Mr. Speechley was the first individual who recommended sulphur for the destruction of the Red Spider (*Acarus tellurius*); and in most cases, by his manner of application, it was a certain cure, viz., by brushing every leaf and stem with the mixture. However, from the length of time it required, connected with the tedious operation of separately brushing both the under and upper surface of every leaf, rendered it almost impossible to do it to any extent.

Another great objection was, the friction of the brush often injured the leaves, so that those who had sufficient perseverance to go entirely through with the operation, generally found, when they had finished, the plants they had been dressing were considerably damaged. This led some persons to start the erroneous idea of washing the flues with sulphur, under the supposition that it would *prevent the insect's appearance;* judging very wisely, that to prevent a disease is far better than to cure it. [If the flues are thus washed, excepting a few yards of the part nearest to the fire, where it is of greatest heat, there will not be the least danger, and a *gentle heat* will be sufficient to produce a *fume* from the sulphur which will *destroy* the insects, be they many or few. The air must be impregnated with sulphureous gas to prove effectual.—Ed.] I know from experience that sulphur in an *ignited state* will destroy either animal or vegetable life, and to apply any quantity of it to those parts of the flues, subject to *great heat,* will always be attended with serious if not fatal consequences. Another train of insurmountable difficulties presented themselves under the old system; the form and texture of the foliage of many trees and plants are so small and delicate, that no person could effectually clean with the brush, but the most that could be accomplished was to just preserve the trees from being actually destroyed by the insects. We very frequently find this insect attack our choice fruit trees against the walls in the open air in dry summers and often so contiguous to the hothouses that the old method of brushing the leaf was seldom found sufficient to stand through one season, without being over and over repeated, in consequence of their so rapidly increasing and spreading from the walls on the outside.

With such a multiplication of obstacles no wonder that the brushing system fell into disrepute. The chief object in destroying insects on plants is to make use of a method, where the operation can be performed with *ease*, *dispatch*, and *without injuring* the most delicate foliage; these and many more essential recommendations are included in a method practised by me, which was originally communicated to me by one of the best practical gardeners I am acquainted with. It is as follows:—Take half a pound of sulphur, put it in a pail, to this add as much water as will make it into a paste; then put three, four, or six gallons more of water, just as the size of the vessel will allow, stir the mixture until the water appears of a pale buff colour. With this liquid, syringe every plant and leaf in the house on which either the insect exists, or to which the least suspicion is attached; let it be repeated twice or three times a week, until every part of the foliage is saturated, or as long as the application of water from the syringe is requisite.

A house naturally damp will, of course, be less liable to the insect; here the mixture should be applied in a thicker state, and at longer intervals. Most gardeners are of opinion that there is something very congenial to the constitution of plants in sulphur; when applied externally, it apppears, particularly under glass, to enter the whole system. It has been detected in plants by chemists, and there is no doubt but it corrects many diseases in vegetables as well as animals.

So well has this method answered, that in houses where the plants had previously been much affected every summer for ten years, I now scarcely ever expect to see another instance of their appearance. This remedy will not only destroy them, when the plants are literally covered, but if applied in time, entirely prevents their appearing at all; I speak from actual experience on the subject. The houses I have already named, and many others that I have had under my care, have given ample proof of the truth of the assertion; and I now feel so satisfied upon the subject, that with the greatest confidence I can recommend it as a specific to the public.

CULTURE OF THE PASSIFLORA EDULIS.

BY MR. CHARLES SHEPHERD, ALTON GARDENS, STAFFORDSHIRE.

The *Passiflora edulis* is a plant well worthy of more general cultivation, were it only for its very pretty and engaging, though short-lived flowers; but by bestowing a little pains, and having recourse to *impregnation*, an abundant crop of fruit may be annually obtained. For persons that have the convenience, a pine stove is the best situation; plants grown *in pots, plunged* in the bark pit, and trained to a wire trellis near the glass, flourish to perfection.

The plant seems to require *straitening in pot room,* in order to throw it into a prolific bearing state, adding to that a copious supply of water in the growing season, which should commence about March, in order to get the fruit ready in good time. The plant succeeds well in a light, rich, loamy soil.

It is easily propagated either by seed or cuttings, the latter being preferable, in order to bring it sooner into a bearing state; two years' old plants being calculated to bear profusely. The fruit when ripe is about the size of a hen's egg. The colour is of a dark brownish purple. The shell is thick, hard, and useless. The inside resembles the jelly of a gooseberry, excepting the colour being yellow, and the seeds much larger. The flavour seems to have a threefold property combined, and is admirably adapted to the palate of persons in general. For its beauty of appearance in bearing a profusion of handsome fruit, it is well worth cultivating (independent of their usefulness as a dessert fruit), and its singularly handsome flowers—green, crimson, purple, blue, and white being intermingled in each blossom. It grows freely, and even fruits when well trained round a cylinder-shaped wirework trellis, and grown in a pot.

DESIGNING AND PLANTING SHRUBBERIES.

BY A NORTH-COUNTRY LANDSCAPE GARDENER.

In continuance of my observations on this department of ornamental gardening, I must remark that the shrubbery may be defined to be the link which connects the mansion and the lawn to the flower-garden, or to the other parts of a residence, and is most generally planted either for shelter or shade, although often as a screen to hide disagreeable objects, for which the plants which compose it are better suited than for forest or other trees. The shrubbery is often a matter of utility as well as of ornament, in which case it gives the highest satisfaction when formed for the purpose of shutting out the offices or the kitchen-garden from the view of the house; for sheltering the latter or the garden, or for connecting the house with the garden and the orchard, the shrubbery becomes useful and interesting.

Sometimes a shrubbery is formed merely for the purpose of growing rare shrubs, and for obtaining agreeable walks; in this case it is necessary to be at more pains, and to display a greater degree of taste in the laying of it out than in the formation of the useful shrubbery; in the former case a tasteful arrangement of plants is a matter of less importance than the choice and disposition of kinds that will soonest afford shelter and ultimately become thick screens.

In planting shrubberies for screens, to hide disagreeable objects, evergreens should form the principal mass, as affording a permanent blind and giving a cheerful appearance even in winter. A few deciduous shrubs of the most showy sorts may, however, be with propriety added, which will give relief to the more sombre appearance of the evergreens, particularly while the former are in flower; but from their nature of annually shedding their leaves, and consequently becoming thin in winter, they are not so well calculated for a permanent blind.

In the disposal of shrubs the tallest should be planted farthest from the walk or front side, and the lower in stature in front, but if an immediate effect be desired it is better to elevate the ground than to plant trees of two great an age; it is also a matter of importance that they may be planted thickly, as it is an easy task to thin them out when required. Little taste has generally been displayed in the formation of shrubberies as to the production of picturesque beauty; they are planted too generally in the form of sloping banks, without the least natural beauty whatever, although in this way they may answer the purpose of blinding out disagreeable objects of little merit when seen even from their best side.

Great attention should be paid in their planting, to give them a somewhat natural appearance, and not that of a surface as regular as if they were clipped with the garden shears. Straight lines should also be avoided as much as possible, and the margin of the shrubbery should be broken with deep indentures or sinuosities, and these should be neatly turfed over and kept mown. The walks which lead through this department should not be to any great distance in a straight line if it can be avoided, neither should they be too much twisted. There is something in a fine gentle sweep or curve so pleasing in a road or walk, that few are insensible of its beauty. The breadth of the walks should be regulated according to the length and scale of the place, as too narrow walks for principal ones have never a good effect; they should scarcely, under any circumstances, be less than five feet wide, and unless for terrace walks of great length should not be more than eight; if the greater breadth, they assume the appearance of a carriage drive, and if narrower, they dwindle in appearance to a mere footpath.

By combining the more distant parts of the grounds with the lawn and house by means of shrubberies, much may be done if executed with judgment. Space does not always give the idea of grandeur, for a limited sphere is often better adapted to the display of ornament and beauty. By good management a small strip of ground may be varied by taking advantage of the ground (if any); or, if it be a level and monotonous spot, art can readily step forward and assist by raising banks, sinking the walks, and planting shrubs in thick masses, chiefly evergreen species, and conducting the walks in the most circuitous manner, so as not to intersect each other but as little as possible; however, care must be taken to give sufficient breadth of walk, and also a margin of grass on the sides, of unequal breadths, which will naturally assist in adding to the picturesque appearance of the whole. This may also be aided by forming the banks to be planted of unequal heights, which banks in small places need not occupy much surface at their base, so as to admit of as great a breadth of grass margin between them and the walks as possible; in some parts narrow, where it is deemed necessary, either for variety or for the more completely concealing objects which should not be seen; at others broad, and disappearing as it were in natural glades in the distance. This margin of grass, where of sufficient breadth, should be planted with the finer species of ornamental trees and flowering shrubs, singly or in groups of three or five together, which would not be seen to sufficient advantage if planted generally amongst the shrubs.

Some attention to botanical arrangement might be paid in the distribution of the shrubs and ornamental trees, but this must not be carried to the extent likely to infringe upon picturesque beauty; however, such families as *Pinus*, *Deodars*, *Cypress*, *Juniperus*, *Buxus*, *Laurus*, etc., may be grouped with good effect, and if judiciously done will give a bolder effect to the whole than if they were planted promiscuously. Fine specimens of larger growing kinds should be so placed as to give effect and relief to the thicker masses of more humble growth. In the background may be placed a few fruit-bearing trees, which will display their beauties in spring with their blossoms, and in autumn with their fruit; in such situations also should be planted the stronger-growing species of *Cratægus Prunus*, etc.

On leaving the mansion, the walks should be conducted through the lawn in a graceful and natural manner to the shrubbery, and should be as much hidden from the principal windows as possible; they should then be continued through the shrubbery, the most circuitous walks leading to interesting objects, so as to relieve the mind and remove the idea that they lead to nothing. Fine specimens of trees, ruins, either natural or artificial water, distant views of villages, churches, woods, cottages, or the like, will always be pleasing. Shorter walks should also be contrived on which to return (as most objects lose their effect when seen over and over), as well as for a more convenient mode of reaching the more distant parts of the grounds. Neat resting-places should be placed in different parts, choosing the situation of some in shady groves, others upon elevated spots commanding the finest views of the grounds or surrounding country. Much taste may be displayed in the formation of such seats, from the polished temple of Flora, Venus, etc., to the rude roots of trees and misshapen fragments of rocks or rude stone. Arbours of living trees of flexible habits, such as mountain-ash, willow, etc., may be planted and formed in bowers, and covered over with creeping plants, such as Roses, Clematis, Ivy, Honeysuckle, etc. Moss-houses of various construction, root-houses, Russian, Swedish, Lapland, Scotch, and Swiss cottages should be disposed of in situations peculiarly adapted for them. Sometimes situations are naturally to be found adapted for the one or the other; in such cases the house should be chosen to suit the situation, and this will always be found to have the happiest effect. Where the situation has to be formed for either, much judgment and taste are required in the arrangement; this is not sufficiently attended to: thus a Russian cottage composed of oak timber-trees, and the adjacent ground planted with laurel and other polished shrubs, natives of southern latitudes, and close-shaven grass lawns, is as preposterous as the chaste Grecian temple in a rocky dingle. The ground should be chosen or arranged so as to persuade the observer that he is really in Russia, and the house should be composed of the same timber-trees used in the formation of cottages in that country, and be of the same form and size. The internal construction and furniture should also come as near to reality as possible. Hermitages and caves are also interesting when proper situations are chosen: in these should be kept a small collection of books calculated for private study, and the furniture of this sequestered retreat should be exactly of that simple and useful nature as would be suitable to a recluse.

CULTIVATING HYACINTHS IN MOSS.

BY MR. WILLIAM BROWN, FLOWER GARDENER AT KNEESWORTH CASTLE GARDENS.

According to promise, I send particulars of the system I have adopted, with very great success, in cultivating these charming flowers.

I procure a quantity of sound bulbs, such as feel weighty and have a clean solid ring at bottom, then number each variety, and make a list of all, as a reference either for the curiosity of ladies and gentlemen, or for the information of the young gardener. Thus prepared, about the 20th of October I get a quantity of the greenest moss; if matted, it must be well separated with the hands; also a number of clean pots of three sizes, namely, large 48's, large 32's, and flat 24's. Place an oyster-shell, or a piece of potsherd, at the bottom of each pot, and fill closely with the prepared moss, to appear like a heaped measure, Take the 48 size, and displace with the finger a little of the moss in the centre, where the bulb is carefully pressed in. As the work proceeds, rub a little white paint on the side of the pot, and with a lead pencil mark the number of the sorts as per list, and one letter signifying the colour, as B for blue. Take the next size, 32, and in like manner place three bulbs at equal distances, and of three distinct colours; next flat 24, in which four or five could be placed, the fifth to be chosen the strongest and best, placed in the middle, a little elevated in the moss, where it gives a pyramidal appearance to the whole. The pots, containing three or four bulbs, should be numbered on the side close to the bulbs, by which they will be distinctly known; the fifth marked with an asterisk, thus *. When all are done in this order, I give them a plentiful watering, and place them in a three-light box, or in a sheltered corner of the melon-ground, with other bulbs, covered with twelve inches of coal-ashes or old tan, and from thence they are taken to the forcing-house as required, until the middle of March, when the remainder can be removed to a frame or greenhouse, and flowered for the drawing-room. They require plenty of air, and protection from frost; watering to be repeated every third day in fine weather, and once a week in dull seasons. I have placed pans of water under some, but without any beneficial effect. Indeed, after various experiments, I prefer the regular application of water as the season will admit. In the course of three weeks they will push forth spongelets into the moss, where they will flourish *vigorously*. The heat of the rose-house, succession pine-stove, or hotbed frame will bring them into flower in three or four weeks in December, January, and February, and in a much shorter period as the season advances. I always use clean water of the temperature of the house; and where there is not a cistern, vessels filled with water, placed in the house during the night, will be fit for use next morning. When the plants are in flower, they may be placed in a variety of shapes to advantage. They can be placed in fancy baskets, as they are extremely light, and the pots easily concealed by strewing a little fresh moss over the surface,—or in the most ornamental situations, without fear of injuring the furniture; or the pots may be taken away by turning the plant down, and tapping the pot all round with the hand until the moss and roots slip out, when they could be placed in baskets, vases, or in other ornaments, without injuring the roots or breaking the moss. Place some moss round the sides to keep them steady, sprinkle the whole with clean water, and remove them to their allotted places. Having placed the baskets on large tea-trays, water to be given from a fine rose watering-pot twice a week over the flowers to refresh them, and to renew their very sweet odour. I advise, too, when the plants are in flower, to take some out of the pots as directed, and to pick all the moss from the roots, then to pass a thread loosely round the roots, and to slip them into glasses filled with water. When the flower-guards are put on, all are complete for windows, etc. etc.; the glasses should be filled with fresh water every third day. If a table-spoonful of charcoal dust be mixed in the water, or the same quantity of chalk (the carbonate of lime), it will preserve the water from any impurity, as well as contribute to the brightening the colours of the flowers.

TREATMENT OF PELARGONIUMS (GERANIUMS OF SOME) FOR THE FLOWER GARDEN, AND PRESERVING THEM THROUGH WINTER IN A FRAME.

BY A LADY PRACTITIONER IN THE NORTH OF ENGLAND.

The Pelargonium is one of the greatest ornaments of the flower-garden; and when the length of time it continues in flower is considered, the endless variety now cultivated, and the many new and beautiful kinds annually raised from seed, it becomes a subject well worth inquiry how this plant may be raised in the best and cheapest manner possible. During a period of many years, it never occurred to me that Pelargoniums could be preserved during the winter months, in this northern climate, without the assistance of *artificial heat;* but having now discovered a means of conquering this difficulty, I take the liberty to lay before you a statement of the method I have practised for the last three years with complete success.

It is necessary, in the first place, to be provided with a light garden-frame, which may vary in size according to circumstances, or the number of plants required. The one I use for this purpose at present is 4½ ft. by 2½, 20 inches deep in the back and 18 inches in front: which will contain seventy or eighty plants in small pots. The most common method of raising the plants is by cuttings. At the end of July or early in August, I take the cuttings off at the third joint, and insert them in rich loam, mixed with about one-third of vegetable mould, in the open border; I then place the frame over them, shading them with a mat for a few days, and giving little or no air for a week. I afterwards increase the quantity of water gradually, giving a little more every time, till they are able to stand the sun without flagging in the leaf. I continue watering them gently until they are well rooted, and then pot them into small pots, in poorish soil, and place them in the open air, to stand during summer, on a good gravel-walk or an open space covered with coal-ashes, to prevent worms from getting into the pots. When the plants begin to grow freely, I pinch off the top shoots, by which means they send out side shoots; otherwise each plant will invariably send up only one, which looks naked and unsightly; whereas, a plant low and full of foliage has a handsome appearance, and flowers freely. Some of the more tender and delicate kinds of Pelargoniums may be propagated by cuttings of the roots an inch long. Plant these round the side of a pot an inch apart, leaving the eighth of an inch of soil above them. Set them in the frame, and when they have pushed a little, plant them in separate pots, giving air and water regularly: when they have grown a few inches, remove them into the open air, and treat them in the same manner as plants raised from cuttings. Seeds may be ripened well in the open air, from plants kept in pots; but those transplanted into the borders (growing very vigorously) seldom produce good seed. Sow the seed in March, in soil similar to that recommended for the cuttings, adding a little sand to it; place the pots in the frame a few inches from the glass, and, when about two inches high, plant them in separate pots; let them remain in the frame till well rooted, and then remove them into the open air to remain during summer. Plants thus raised will flower well the second year.

Plants kept long in pots grow naked and stunted, and require to be headed down to within a few inches of the pot; this is done at the period stated for putting off the cuttings; afterwards set them in the shade, and give no water for a week before and one after the operation; this prevents the plants from bleeding, which often destroys them altogether. About the latter end of October, or on the first appearance of frost, the plants raised from seed, from cuttings, or from roots, and kept in small pots during summer, should be placed in the frame, with a few inches of coal-ashes below the pots, to prevent the plants from suffering from damp during winter. Shut up the frames closely at night, and give air freely during the day. As the winter advances, give water sparingly, and pick off all decayed leaves as they appear. Cover all round the frame with about two feet of soil pressed close, and nearly level with the glass, sloping a little to carry off the wet. When the frost sets in, cover with mats at night; and when the weather is very severe, use a straw mat, and over all a wooden shutter, a little larger than the frame. Give air every day when mild, and in severe weather uncover the frame when the sun's rays fall upon it, taking care to cover when the sun leaves it in the evening. As the spring advances, give air more freely, by sliding down the sash altogether in the daytime, to prepare the plants for being turned out of the pots, and transplanted into the flower-garden, which may be done about the beginning of May. By this method a constant supply may be kept up at a very moderate expense.

NOTES ON NEW AND SELECT PLANTS.

26. Æschynanthus fulgens (*Flame-coloured*). Nat. Ord. *Cyrtandraceæ*. This species is a native of Savoy; first discovered by M. Gomez. Subsequently, Mr. Thomas Lobb collected it, at Moulmein, and sent plants to Messrs. Veitch. It blooms very freely, and few plants can exceed it in beauty, especially if suspended in the stove in a wire or small trellis basket. The flowers are of a bright crimson colour. (*Fig. in Bot. Mag.* 4891)

27. Weigela amabilis (the *Wrinkle-leaved*). Nat. Ord. *Caprifoliaceæ*. It is a shrubby plant, more robust in habit than the *Weigela rosa*, and equally hardy. The leaves are much more prominently *netted* with the veins than those of *Weigela rosa*. The flowers, too, are of a deeper rose colour, and the lobes of the corolla are *wavy* and *notched* at the edge. It is a profuse bloomer, and well deserving a place against a trellis, wall, or open ground. (*Fig. in Bot. Mag.* 4893.)

28. Clivia Gardeni (*Major Garden's Clivia*). Nat. Ord. *Amaryllidaceæ*. Major Garden discovered this pretty species in the Natal Colony, and also sent it to the Royal Gardens at Kew. The flowers are produced in *umbels*, about fourteen drooping flowers in each. Each blossom is slightly curved, two inches long, funnel-tube-shaped, of an orange-red colour below, yellow above, and green at the end. It is a charming plant for the greenhouse, blooms in the

winter months, and continues for several weeks. (*Fig. in Bot. Mag.* 4895.)

30. AGAVE AMERICANA IN DEVONSHIRE.—The first American Aloe that ever grew and flowered in the open air in Britain was in the garden of the late James Yates, at Salcombe, Devonshire, about the year 1814. We thought it (Sir W. J. Hooker) a privilege to see the plant after it had done flowering, with the withered scape, attesting the fact, still attached to it. That plant was stated to have been only twelve years old. Its locality was upon the lawn in front of Mr. Yates's villa, and, as far as we can recollect, with only the road intervening between it and the sea-beach.

Since that period Salcombe has increased in population, in houses and villas, and, no doubt, in Agaves; for our valued friend, John Luscombe, Esq., of Combe Royal, in tho same neighbourhood, himself a great lover of plants, has sent us photographed portraits of no less than four different Agaves, at this time (November, 1855) in full flower, in three different localities, at Salcombe. *One* is on the property of Mrs. Prideaux, Cliff House, and is represented within a wall, on a small promontory, apparently jutting into the sea. It is twenty-six years old, and has attained a height of twenty-six feet. A *second* and *third* are represented upon the side of a rough hill, full of wild plants, and seemingly not in any garden or enclosure; these are, respectively, twenty-six years old and twenty-five feet high, and thirty years old and twenty-eight feet high. Other flowerless Agaves growing close by, and the broad sea visible over the edge of the hill, give the scene the appearance of a coast of the Mediterranean about Nice. These are on the property of Mr. Strong. The *fourth* is in the grounds at "The Molt," the property of Lord Courtenay; the height not given, but judging from the size of the tasteful residence adjacent, and the neighbouring trees, altogether forming a most charming subtropical landscape, it must be the tallest of the four. Our greenhouse Agaves, as is well known, flower so rarely as to have given rise to the saying, and which is generally believed, that the American Aloe is a plant which blossoms only once in a hundred years; here, again, we suspect horticulture is at fault. (*Hooker's Journal of Botany.*)

The following is a list of eleven rare and hitherto undescribed Australian Plants, chiefly collected in the colony of Victoria, by Dr. Ferdinand Mueller, Government Botanist for that colony.

31. RANUNCULUS MILLANI.—In gravelly places, on most of the summits of the Australian Alps irrigated by the melting snow. A neat little plant, having white flowers, which assume a slight yellow tinge when drying.

32. RANUNCULUS ANEMONEUS.—On springs at the summit of the Munyang Mountains. This charming and interesting species forms (after *Grevillea Victoriæ*) the greatest ornament to the snowy mountains of Continental Australia. It differs from the similarly showy species of New Zealand in its *white flowers*, and approaches rather to the Alpine type, as *R. aconitifolius.*

33. **Myosurus Australis.**—On moist places, or on open plains where rain-water lodges. Apparently not different from *Myosurus minimus.*

34. **Caltha introloba.**—A dwarf species, on gravelly places on the Australian Alps irrigated during summer by the melting snow. It is the only known New Holland species. Distinguished from *Caltha Novæ-Zelandiæ* principally by its *white* flowers.

35. **Sisymbrium trisectum.**—A suffruticose, smooth, erect plant, found in the desert, on the Murray River.

36. **Capsella** (*Hutchinsia*) **antipoda.**—It belongs to the Natural Order of *Cruciates.* An annual, having white flowers. Found in the Black Forest.

37. **Drosera angustifolia.**—The stem is foliate, leaves long and narrow. The flowers are borne in racemes, three to ten blossoms in each, of a whitish colour. On moist gravelly margins of the lakes on Murray River.

38. **Polygala veronicea.**—A somewhat shrubby plant, thinly branching. The flowers are borne in terminal or lateral *racemes.* In grassy or gravelly places.

39. **Comesperma polygaloides.** Nat. Ord. *Polygalaceæ.* Leaves narrow, lance-shaped; flowers in racemes, purple. In barren plains.

40. **Marianthus bignoniaceus.** Nat. Ord. *Pittosporeaceæ.* The branches are climbing; leaves heart-shaped; flowers pendulous, somewhat bell-shaped, an orange-yellow colour. A remarkably handsome plant, growing in clefts of rocks, on shady rivulets, by cataracts, etc.

41. **Howittia trilocularis.**—A flexile *shrub,* grows twenty feet high; belongs to the *Malvaceæ;* the flowers are of a purple colour; very pretty, and merits a place in every shrubbery.

42. **Tydæa amabilis.**—The type of the genus *Tydæa* is the *Achimenes picta.* The very neat and handsome species *T. amabilis* was discovered by the celebrated botanist M. Triana, in New Granada, in the province of Popayan. The leaves are of a velvety hue, light green marbled with dark. The tube of each blossom is about one inch and a half long. The outside is white streaked with a beautiful rosy carmine; the inside white marbled with rosy carmine. The front of the blossom (limb) is an inch across, of a bright rose, shaded with brilliant carmine. It blooms freely, and is exceedingly neat and handsome. (*Fig. in Flore des Serres,* 1070.) M. Linden, of Brussels, has plants for sale, and it merits a place in every collection. It blooms admirably, too, in the winter, and with suitable treatment may be had in flower all the year, similar to *Achimenes picta.*

43. **Sarracenia Drummondii** (*Side-saddle Flower*).—This handsome species was discovered a few years ago by Dr. Chapman, an American botanist, near to Appalachicola, in Florida. It flourishes in great beauty at Chatsworth; and plants may be procured at a cheap rate of M. Linden, of Brussels, or M. Van Houtte, of Ghent. The leaves are singularly handsome, of an upright *pitcher shape,*

hollow, about ten inches long, bright green, with one-third of each leaf (the terminating portion) beautifully marbled with numerous silvery, metallic-like patches, and the margin of the pitcher a rosy crimson colour. The flowers are of a rich crimson, tinged with purple and yellow. Each blossom is composed of five petals and five large calyx leaves, also coloured, drooping, three inches long and three inches across; very beautiful. It flourishes in its native country on the banks of rivers, and in our own country and on the Continent it flourishes when grown along with the *Victoria regia*, and similar boggy water plants. (*Fig. in Flore des Serres*, 1071, 1072.)

44. Sarracenia rubra.—It forms a bushy plant, about eight inches high; the pitchers are *narrow*, half an inch across, green, with a tinge of red at the termination. The flowers are of a rich purple-red, drooping, each blossom about an inch and a half across. (*Fig. in Flore des Serres*, 1074.)

45. Sarracenia purpurea.—The pitchers are short, four to six inches in length, very wide, two and a half to three inches across, green, netted with brown at the upper part. The flowers are of reddish-purple petals, wide apart, each blossom two inches across. This species and *S. rubra* are natives of North America; nearly hardy.

46. Rhododendron, Prince Camille de Rohan.—This very handsome variety was raised from seed obtained from *R. maximum*, impregnated by a variety of *R. arboreum* or *R. Caucasicum*. The leaves are of medium size. The flowers in fine compact heads and each blossom two and a half inches across, of a silvery rose colour, very distinctly edged with bright carmine. The three upper segments are beautifully spotted with carmine. The edge of the blossom is numerously indented. It is a very charming variety, and we are informed is quite hardy (*Fig. in Flore des Serres*, 1073.)

47. Psammisia sclerophylla.—This beautiful shrubby plant belongs to the Natural Order *Ericaceæ Vaccineæ* (Bilberry), and was first discovered by M. Linden, in woods, in the province of Merida, at an elevation of 7000 to 8000 feet. It bloomed, for the first time in Europe, in the greenhouse at the establishment of M. Linden at Brussels, in 1852. The flowers are tube-shaped, one inch and a half long, of a clear brilliant red, with a very distinct yellow tip. It is a charming, free-blooming shrub, well deserving a place in every greenhouse pit-frame. It flourishes in the open ground, but in cold situations it requires protection in winter.

48. Begonia magnifica.—It was discovered by M. Linden, in Cundinamarca, in New Granada, growing at an elevation of about 8000 feet, in cold and moist situations. M. de Warscewicz also found it in New Granada, and describes it as being the most beautiful and ornamental flowering plant he had seen; it was of extraordinary magnificence. It forms a *bushy* plant; the leaves are thick, the upper side is velvety and handsomely veined with silvery white, reflecting a metallic lustre. The nerves at the under side of the leaves are of a

red-brown colour. The flowers are of a brilliant scarlet, each being two inches across; they are borne in numerous heads, each branchlet having six to eight blossoms. M. Linden has plants for sale, and its highly ornamental appearance and long period of blooming entitle it to a place in every greenhouse or stove.

49. Locheria magnifica (*Achimeneæ*). This *very handsome* flowering plant was introduced by M. Triana, from New Granada, to M. Linden's establishment at Brussels, where it has recently bloomed. The *Locheria* has been founded upon *Achimenes pedunculata* as the type. This beautiful species is a free bloomer, and each flower has a wide tube, about two inches long, of a brilliant crimson colour. The limb (front of the flower) is nearly two inches across, a brilliant crimson colour, spotted and striped with dark violet-purple, and the throat is white. It merits a place in every stove or warm greenhouse. Plants may be had of M. Linden.

50. Didymopanax splendidum (Syn. *Aralia splendida*). This very elegant *Aralia* was found in the temperate regions of New Granada. It forms a strikingly handsome tree, from thirty to fifty feet high. The leaves are composed of seven to nine folioles, of an oval lanceolate form, and each of them are two feet long, so that the leaf is four feet broad. The upper side of the leaves is a satiny green, and the under side a silvery white. It is a magnificent tree, and merits a place wherever superb ornamental ones can be introduced, in either park or pleasure ground. M. Linden has plants on sale.

QUESTIONS, ANSWERS, AND REMARKS.

Cutting in the Head of an Old Standard Rose.—I have recently entered into a new residence, and in the garden and grounds are a considerable number of *budded Standard Roses*. They have not been pruned for some years; the heads are large, and contain a vast number of branches and shoots; all the inside is naked. I wish some reader who is practically acquainted with the mode of treatment of such roses in order to obtain new heads, would supply me with particulars. In cutting back the naked head, where must I prune to—that is, how near the origin of the shoots—and am I to cut back *all* the shoots at first, or only a portion now, and the others another season? I have not had any practical knowledge of the treatment of such roses, and those I have appear to be excellent sorts, which I am desirous of retaining. They have grown vigorously, which confirms the fact of the soil suiting them.—*Juvenis.*

On Ixias, Sparaxises, etc.—One of your readers will be much gratified by an early reply to the following queries (she was much pleased with Mr. Saunders's remarks on bulbous plants, given in last number):—1. How can the bulbs of *Ixia* and *Sparaxis* be managed in a greenhouse where artificial heat is not given them, except by means of a hotbed, and that only for a very limited time? I find them increase rapidly by offsets but they *never* open their flowers well, and the leaves generally begin to turn yellow before the flower appears. 2. What treatment should be pursued with regard to bulbs newly imported from Brazil?—*Albina.*

On destroying Woodlice.—How am I to destroy, most effectually and readily, woodlice, with which I am pestered in my greenhouse and frames to an enormous degree?—*Alpha.* [Cold boiled potatoes put into small garden pots, and covered with a little loose moss, and placed where most likely to be found by the insects, is the best method we have tried. The insects are fond of the potato, and remain concealed under the moss. The pots require examining early in the morning, and the insects destroyed; when requisite, replace with fresh potatoes. We have used ingredients, poisonous, which, mixed up with other things, effectually kill the insects partaking of it; but as danger attends such a mode of destruction, we do not recommend its adoption.—*Editor.*]

ON PRUNING ROSES.—As an *Amateur Florist,* and devoted to the Rose above all other beauties of the Garden, it would do me a most especial benefit and favour, by giving a page or two in your *Cabinet* to the art of *pruning Rose Trees,* now become almost a "craft or mystery," by reason of the numerous plants of recent introduction. I have nearly killed some valuable sorts by pruning after the old fashion. Mr. Rivers has skimmed the subject in his "Guide," but much more is wanted; and let me entreat you, or some reader who is practically acquainted with it, before the spring, to comply with my seasonable request.

ON A ROCKERY.—A constant reader of the *Floricultural Cabinet* will feel much obliged if any of your correspondents will give her hints for the formation of a rockery in a situation where no advantages can be derived from the nature of the ground, being merely a flat lawn; also what plants are best suited for growing in such a place, taking into consideration the northern climate, at the same time the aspect is south-west, and well sheltered by wood. Plenty of peat soil and white spar-stone can be obtained. An answer in an early number will greatly oblige.—*Georgiana Elizabeth.*

HIBISCUS MANIHOT.—We have, in a small forcing-house, a plant of *Hibiscus Manihot,* which appears very healthy, and has just (November 20th) produced two very fine flower-buds, that grew very nicely, but both have fallen off before expanding. If some reader hereof, who knows how to manage the plant so as to bloom it successfully will oblige me with the method of treatment so that I can ensure its blooming, it will greatly oblige.—*Florilla.*

CULTIVATION OF BRITISH FERNS.—As there is just now a *perfect* mania for Ferns, I am certain it would be of much service, if there were particulars of their treatment given in an early number of the *Floricultural Cabinet.* No doubt some of the subscribers have a practical acquaintance with the management of many kinds, and I respectfully solicit from them a few remarks calculated to assist a *Floriculturist.* [We feel assured the request will gladly be complied with.—*Editor.*]

ON BANISHING ANTS.—I tried the plan of dusting common flour sulphur over ants with a view to kill them, but in this have failed; it, however, had the effeet wholly to banish them, for, although I turned over the soil in the melon bed, and examined the neighbouring places, not one ant could be found. I have tried it in several situations, and it invariably banishes them. It equally affects black and red ants.—*P. M.*

CARNATIONS AND PICOTEES—*Soil for Carnations:* one barrow of well-decayed manure to four barrows of good turfy loam. *Soil for Picotees:* one barrow of well-decayed manure to three barrows of good turfy loam. The soil, as will be seen, will be richer for Picotees than Carnations, as the latter flower has a tendency to run in colour. In November, mix the soil in a dry state, and fully expose it to the action of the air. During winter, remove the frosted surface at every opportunity, and place it in a heap by itself, until the whole is frosted. Keep it dry from snow and heavy rains, and turn it over often, until required for use. We bloom our plants in eleven-inch pots, each pot accommodating from three to four very strong plants. Weaker plants should be grown in eight-inch pots, two or three plants in a pot. Begin potting the first week in March, using from two to three inches of broken crocks and clinkers as drainage. Chop the soil well, *sifting only a portion, for about three inches of soil at the top* using the coarse portion of the siftings as a thin layer over the crocks, to assist drainage. *Pot very firm indeed.* After potting, expose them fully to the weather, placing the pots on two parallel slips of wood, so as to ensure good drainage, and prevent the ingress of worms. Water moderately after potting. We have been induced to offer these remarks on the culture of Picotees and Carnations, in consequence of having received so many communications lately on the subject, and believing also that our plan of culture would be as acceptable to our readers as any. We are anxious to impress on the minds of readers, that Carnations, Picotees, and Pinks are thoroughly hardy plants, and will bear any amount of frost, under proper treatment,—by which we mean, ***being kept dry in a dry frame, well aired, and moderately watered in sunny open weather.*** In short, as a general rule, keep dry and air well. We wintered several thousand pairs in dry frames, without any covering whatever, with the soil frozen hard for weeks, and were rewarded by luxuriant health and vigour. With many, the Carnation is treated too ***tenderly***, by keeping them in close frames, watering too freely, and covering too much. It is also a great fault to pot off in *large pots* for wintering. We use none larger than large sixty-sized pots for a pair of strong layers.

CAMELLIAS.—Any person possessing a sufficient stock of these favourite plants, and the necessary accommodation, may have a supply of blossoms from August to May. To secure this, it is necessary to place a portion of the plants in a growing temperature of sixty degrees or sixty-five degrees, in January, or early in February, and others at intervals of a month or six weeks, leaving the latest portion to make wood and set flower-buds in a cool-house; it may, however, be necessary to remove the late plants to a higher temperature, to induce them to form flower-buds; but, except in the case of very vigorous young plants, this will hardly be required. The Camellia is somewhat easily injured by the direct rays of the sun while in a growing state; it enjoys a shady situation, under Vines, for instance. The plants should be freely supplied with weak manure-water at all seasons, and especially while growing, and they will be benefited by frequent syringings. As soon as they have made their wood and formed their flower-buds, they must be removed to a cooler situation, and, as soon as the weather will permit, may be placed in a sheltered shady place out of doors. The plants which were placed in heat in January or February will probably be in flower in August; but if not, they may be removed to a warmer atmosphere, to encourage them to develope their buds.

THE TABAN (*Isonanda Gutta*, Hooker), formerly so plentiful in Singapore, has long since been extinct. It must ever be an object of regret, that on the first introduction of the Taban Gum its proper name was not promulgated. Now almost everybody in Europe and America speaks of Gutta Percha, when, in fact, all the time they mean the Gutta Taban. The exportation of the indigenous Gutta Taban, from Singapore, commenced in 1844, but as early as 1847 all, or at least most of the trees had been exterminated. That at present shipped from the place is brought in coasting vessels from the different ports of Borneo, Sumatra, the Malayan Peninsula, and Jahore Archipelago. The difference existing in its appearance and property is owing to the intermixture of Gutta Percha, Jeletong, Gegrek, Litchu, and other inferior Guttas, in order to increase the weight. Though far from extinct in the Indian Archipelago, Gutta Taban will every year be more difficult to obtain, as the coast region is pretty well cleared, and a long transport from the interior must, by augmenting the labour, increase the price of the article. The quantity of solid Gutta obtained from each tree varies from five to twenty catties, so that taking the average of ten catties, which is a tolerably liberal one, it will require the destruction of ten trees to produce one picul. Now the quantity exported from Singapore to Europe, from January, 1845, to the middle of 1847, amounted to 6918 piculs, to obtain which 69,180 trees must have been sacrificed. How much better it would be to adopt the method of tapping the tree, practised by the Burmese in obtaining the Caoutchouc, than to continue the present process of extermination.—*Senex.*

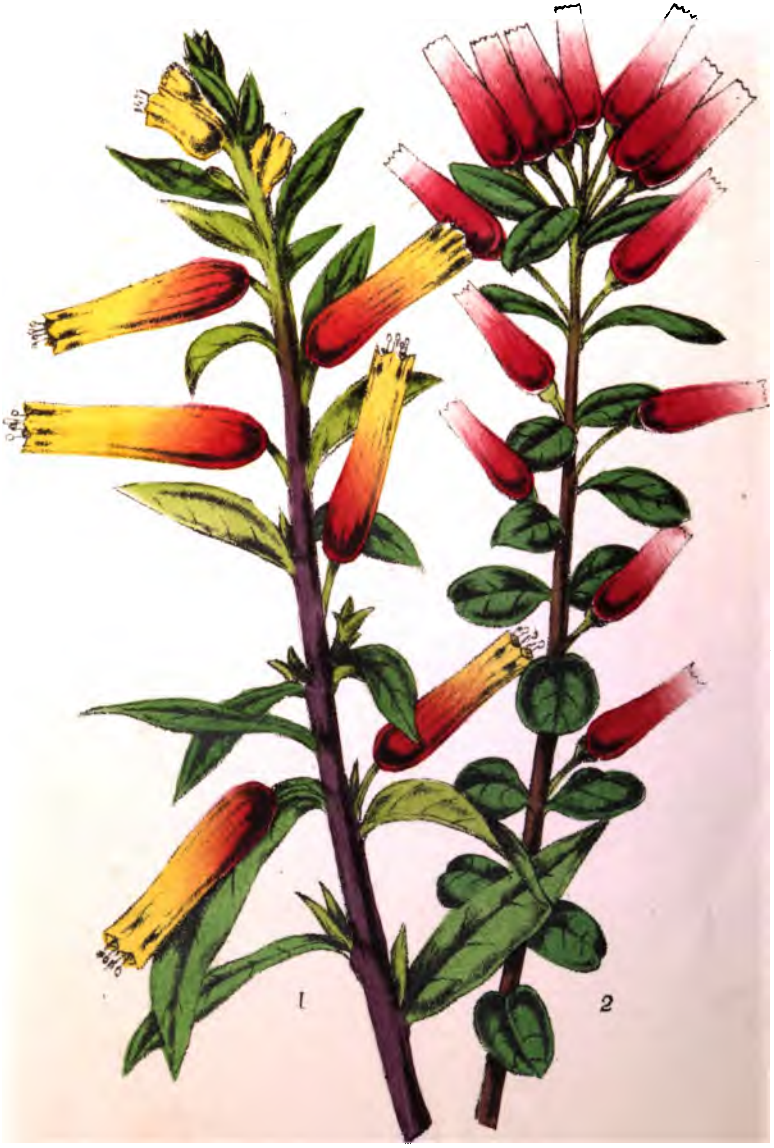
MIMOSA PROSTRATA.—A very pretty trailing plant, with neat foliage, and which blooms profusely; the flowers are of a delicate pink colour. It is admirably adapted for training up or round a wire trellis, pillar, etc. It grows very freely, either in the greenhouse or open air; and deserves a place in either. I bloom it most beautifully, and have a quantity of plants.—*A Country Curate.*

REDUCING THE GENTIANELLA TO OBEDIENCE.—Being but a poor gardener myself, I never hoped to be able to give even a hint on any operations in that science; but the request from a correspondent "P. B.," in this week's *Cottage Gardener*, for information in growing the *Blue Gentianella*, and your (shall I call it craven?) advice to him to give it up, induces me to take up my pen and give you a word or two on the subject. An old gardener in this neighbourhood grows it to perfection, and in the season brings large quantities of it to market. My father-in-law purchased the plant several times, but, like yourself and your correspondent, could not succeed in blooming it the second year. He then asked the man how he treated it, and by adopting his method has succeeded very well. The soil is *solely* the scrapings from a Macadamised road; the plant is planted in a patch of it, if planted singly; or beds or borders made, if wanted, of the scrapings, and before the plant is set. The soil must be made as hard as possible, and then the plant put in with a trowel, and the soil pressed round it as hard as can be done. The gardener said, *roll* it after planting; but it will grow without such cruelty. I may say that our roads are made with broken *gravel* stones. Some roads are made with granite; but I do not think that would make much difference. In surface-dressing the border, the soil round the *Gentianella* must be stirred as little as possible. I think the man referred to never disturbs his bed at all.—A. M., *Cottage Gardener*.

HOME-SAVED FRENCH AND GERMAN ASTER-SEED.—I am a great admirer of these lovely flowers. For many years I procured a fresh supply of seed at the London seed shops, but scarcely ever succeeded in obtaining a packet that did not contain a mixture. Three years ago I began to provide my own seed, and as soon as I perceived a plant blooming that did not belong to the kind expected, I removed it, and by this means had the bed of only one sort. My beds designed to supply me with true seed of Asters, too, were in remote places from each other, in order to avoid impregnation by bees. By this attention I now have seed true to kind, from year to year. In the flower-garden where patches of Asters, or a small bed of several kinds are required, of course I do not save such seed for future correctness of sort. I must observe, too, that the flowers produced from the plants of my own saved seed are much larger than those from the foreign imported seed.—*Clericus, Berkshire.*

NEW AND SUPERB CINERARIAS, shown in 1855, and to be sent out early this spring.—***Admiral Lyons***, Henderson; ground white, tipped with violet purple, and a dark disc (centre); large and superb form. ***Beauty of Dulwich***, Smith; ground rosy purple, with a pure white circle round the dark disc; large flower, dwarf habit, profuse bloomer. ***Brilliant***, Lidgard; white ground, with a broad margin of light blue, and a deep purple disc; large and fine form. ***Cleopatra***, Smith; ground a rosy crimson, and a clear white circle round the dark disc; very showy. ***Duchess of Wellington***, Turner; white ground, with a broad rosy lilac margin, and buff disc; fine form. ***Emperor of the French***, Turner; rosy crimson ground, with a broad white circle round the dark brown disc; large flower, and good shape. ***Lord Cardigan***, white ground, with a broad edging of violet-purple; flower large and showy. ***Magnum Bonum***, Turner; ground purple-crimson, with a pure white circle round a very dark disc; flower large and showy. ***Model***, Smith; ground rosy lilac, with a white circle round the large dark brown disc; good form. ***Monarch;*** ground rich plum colour, with a rosy crimson disc; fine form. ***Purple Standard***, Turner; ground good purple, with a white circle round a dark disc; good form. ***Queen of May***, Lidgard; white ground, with a bright blue margin, and buff disc; good form. ***Rose of England***, Bouisses; light ground, with a broad rosy purple margin, and a dark purple disc; very fine form. ***Wonder***, Smith; ground rosy crimson shaded with purple, and a white circle round a very dark disc; good form.

The following are the ***best twelve kinds*** previously sent out, and deserve a place in every greenhouse. ***Admiral Dundas;*** white edged with plum colour; fine form, and showy. ***Advancer;*** pure white, edged with rich blue, and a buff disc; very showy. ***Constellation;*** pure white, with a deep blue margin, and creamy disc; fine form. ***Exquisite;*** pure white, with a rich crimson margin, and a black disc; fine form. ***Lord Stamford;*** pure white ground, with a porcelain blue margin, and light disc; fine form, and showy. ***Mrs. Foster;*** white ground with lilac margin, and white disc; handsome. ***Mrs. Segrave;*** rich deep blue, with a white disc; fine form and showy. ***Rosalind;*** pure white ground with a purple margin, and grey disc; superb form. ***Novelty;*** rich damson colour, with a white disc; remarkably showy. ***Picturata;*** pure white ground, with a broad margin of rosy purple, and a lavender-coloured disc; superb and showy. ***Prince Arthur;*** bright scarlet-crimson, fine form, large flower, very showy. ***Octavia;*** rich azure blue, with a white disc; very pretty, and of dwarf habit. ***Mrs. Gerald Leigh;*** clear white, with a purple margin, and a blue disc; very handsome. ***Mrs. Rogers;*** pure white ground with a plum-coloured margin, and dark disc; very fine. ***Fascination;*** very rich deep blue, with a white circle, round a dark disc.



1. CUPHEA EMINENS.
2. GONOCALYX PULCHER.

The Floricultural Cabinet.

MARCH, 1856.

ILLUSTRATION.

I. CUPHEA EMINENS.

This very handsome and showy plant is a native of the temperate regions of Mexico, where it was discovered by M. Ghiesbreght, who forwarded seeds of it to J. Linden, Esq., Director of the Royal Zoological Gardens at Brussels, in whose establishment plants have bloomed. It proves to be far the handsomest of the pretty genus. Most of our readers know and admire the lovely *Cuphea platycentra* and *C. strigulosa;* but this new species is much more ornamental, either in the greenhouse or when grown as a summer *bedding plant.* It is a free-growing half-shrubby plant, branching numerously, and blooming in profusion. It forms a neat, bushy, elegant plant, one foot to half a yard high, according to the richness of the soil in which it is grown. It is, however, readily kept to any desirable size, easy of cultivation, and is propagated readily. It merits a place in every greenhouse, dwelling-room window, and flower garden. M. Linden has plants on sale, and, through his London agent, any number can be obtained.

II. GONOCALYX PULCHER. *Nat. Ord.* VACCINEÆ.

This very charming, *bushy,* low shrub was discovered by M. Schlim in the province of Ocana, in Mexico, growing at an elevation of from five to seven thousand feet. It grows freely and blooms in profusion, in a cool greenhouse or dry pit-frame. The very neat foliage with which the plant is adorned, in contrast with its numerous lovely blossoms, render it especially ornamental; the *young leaves* being tinged, too, with rosy purple adds to its pretty appearance. M. Linden has plants on sale. It is well deserving a place in every greenhouse, and as it is very probable that it will bloom freely and for a long season in the open ground, in summer, it is highly entitled to a place in every one.

MANAGEMENT OF TEN-WEEK AND OTHER KINDS OF STOCKS.

BY MR. WILLIAM JONES, OF BIRMINGHAM.

Having cultivated, for my own amusement, with great success, for several years past, the Ten-week Stock (*i. e.* the scarlet, the purple, and the white, as well as the German varieties, also the *Giant Stock* and its affinities), I am induced to inform you of the method I pursue, in order to have a fine bloom of them *in the spring.* The last week in October, I remove the frame from a cucumber bed, situated in a full south aspect, raking all the old mould from the surface, until I come to the old dung. I then replace the frame, and spread on the top of the dung about three inches thick of good loamy soil, raking it even, on which I sow the seed pretty thick (of course keeping each colour separate by a mark). I give it a good sprinkling of water, and shut the lights down close until the plants appear; after which I open the frame every day through the winter, except in wet or frosty weather; but from the time of sowing until the middle of March, I never let them have a drop of water; in that particular depends their flourishing through the winter, for if they once get wet, they are sure to shank off. By exposing them to the cold I make them hardy, so that I can plant them about the middle of March, and I always prefer doing it when the the weather is dry; and though at that season the wind is generally harsh and frosty, I do not find it affects the plants. By planting in dry weather, the plants get hold of the earth before the worms can drag them out. In order to have some extra strong plants, and as early in bloom as possible, I adopt the following mode of treatment.

I place a three-light frame in a sheltered situation, and have the soil beat as firm as possible; upon it I place *thin turf*, from a good pasture ground, laying the grass side downwards. I then spread over the whole about two inches deep of well-enriched loamy soil, and as soon as the young seedling plants are fit to prick out, I have some of each sort done, putting them in at about four inches apart. Through winter they are treated as stated above. At the middle of March, I transplant these vigorous plants into the beds or borders. In doing this I cut through the compost and turf, so that each plant has an entire ball of four inches square, by which means they do not receive any check in removal, but on the contrary, the roots being cut at the sides of the ball, causes the production of more lateral ones, and promotes their vigour, and a proportionate increase of flowers. Of course, this causes a little more attention, but amply repays for it. I prefer planting each sort in a bed by themselves for blooming, as I fancy they make a much finer show than when planted about the borders. These plants begin to bloom in April in some seasons, but in all cases the beginning of May, and continue to

the end of August, or later; then the *spring* sown succeed them, and bloom to the end of October.

CULTURE OF PORTULACCAS IN THE OPEN BED OR BORDER.

BY A NOBLEMAN'S FLOWER GARDENER IN STAFFORDSHIRE.

Treated as half-hardy annuals, the seeds of Portulacca should be sown in the beginning of March, on a gentle hotbed, protected by common mats or thick canvas thrown over a temporary wooden framing; or they can be sown in pots, and these plunged in fermented material in any hotbed that happens to be in use. When the young plants appear, they should be potted in small pots, and kept for a time in a warm frame or greenhouse, and afterwards transferred to an open frame, which should be covered at nights in cold weather, till they are required for transplanting. About the middle of May they should be transferred to the open ground; but a *dry sheltered* border or *rockery* must be prepared for them, and the soil should not be of a wet or retentive nature. They will thus flower during sunshine (for the flowers do not expand except under the direct rays of the sun) for a lengthened time, and seldom cease before the arrival of frost. They are exceedingly beautiful, blooming very freely, from six inches to a foot high, and in a well-filled bed or good patch are highly ornamental. I possess the following kinds:—Double white with pink eye, double rose, double crimson, double yellow with red eye. Each blossom of the above is an inch and a half across, good double. Of the single flowered I have white striped, purple, yellow, scarlet, rose, and crimson. A bed well mixed, or a patch, are very interesting and pretty. Persons desirous of purchasing the above may be supplied by the general seedsmen, the *colours* being given.

MANAGEMENT OF THE LARGE-FLOWERED SHOW PELARGONIUMS.

BY MR. JAMES BARNES, AN OLD AND SUCCESSFUL EXHIBITOR.

Having been several times solicited to give *particulars* of my method of managing the above class of plants, I have much pleasure in forwarding a short detail thereof.

The cuttings are placed in an open border, about the middle of July, and the situation selected is one fully exposed to the mid-day sun. In about six weeks the cuttings are rooted, and are then potted into sixty-sized pots. The pots are placed in a shady situation, on boards or slates, and in three weeks they are removed to a more exposed and airy situation, when the wood becomes hard. They remain here till nearly the end of September, when they are taken into the house for the winter. At this time the plants are ***stopped*** at the third or fourth joint, and they are at the same time ***shifted*** into forty-eight-sized pots. The soil is a turfy loam and sand. After this shifting but little air is given for about eight or ten days; but after this time as much air is again allowed as the state of the weather will admit, till about the beginning of December, when the pots will be well filled with roots, and require to be again removed into thirty-two-sized pots. Bone-dust is added, but with caution; and never near the *surface* of the soil, because it is of too drying a nature. The plants are again stopped, and the temperature of the house is maintained at about 45°; at the end of ten days it is allowed to fall to 42° or 40°. The flues are damped two or three times every night, to keep the air of the house moist, allowing top air when the weather is favourable. About the midde of February, the plants intended for large specimens are again shifted into forty-two-sized pots; and the vigorous-sized kinds require a size larger. At this time each shoot is tied separately to a proper stake. Fires are discontinued about the beginning of April, and the plants are syringed overhead three times a week, and the house closed for the night. This treatment is continued for about a month, the house being damped every evening, and the top sashes opened the first thing in the morning, and as much air allowed during the day as can be given with safety. When the plants show bloom they are freely watered, and shaded with canvas. At the time of housing the plants, the dead leaves are carefully removed, and when the green fly makes its appearance a fumigation of tobacco is used, care being taken that the plants are in a dry state at the time; they must be well watered in a day or two afterwards. When the flowering season is over, the plants are removed to an exposed situation for a fortnight, till the wood is hard, when they are cut down. Those plants intended as specimens the second year after heading down are placed in a sheltered situation, where little water is given, and when the shoots are an inch long, they are shaken out of the pots and planted in others two sizes smaller; by this treatment they are kept more healthy during winter. When thus potted, they are placed on a stage in a shady situation, and removed to the house "at the proper time," and treated during the winter as already described.

The plants intended for exhibition are occasionally watered with liquid manure; syringing overhead is discontinued. Gauze blinds are used, by which bees are prevented entering the house to injure the bloom; these plants are never allowed to flag by exposure to the sun, or for want of water. It is especially recommended to commence the training of the plants at an early period of their growth, while the shoots are young and pliable. By early training, the shoots acquire the desired form, and fewer stakes are therefore required. The flowers are arranged so that there is an equal distribution of blooms over the head of the plant; to effect this, small willow twigs are used. "Practice alone can teach the art of preparing flowers for exhibition. The less *art* is used the better, and the means should always be kept out of sight." The compost I use for my Pelargoniums is the following:—Two barrowfuls of good maiden loam, with the turf, one ditto well-rotted cow-dung, three years old. This requires to be frequently well turned over in winter, to destroy the worms and insects. One peck of silver sand, one ditto of bone-dust; for the winter repotting, a little more sand is added.

PROPAGATING PINKS FROM SLIPS.

BY MR. MORRIS, AN AMATEUR FLORIST.

I HAVE long grown my favourite flower, the Pink, and increased it annually by pipings, but the process has not always succeeded to my expectation. Last year I was instructed to raise them by slips, which, when slipped off, had the ragged portion, where torn, cut quite smooth, and in that state were fit for pricking off, avoiding cutting off the ends of the leaves, as is done in preparing pipings. In July, 1854, I had a portion of a south-aspected border prepared, by mixing with it one-half of fresh loam, digging it fine, and beating it as *firm as possible*, after which I watered it, and inserted with my finger the slips, taking care that the lower end of the slip is bent flat upon the surface of the soil, and being pressed in that position into it, it turns round the point of the finger; in that form the soil is *firmly* closed round it, after which a good watering closes the process. I had a wire screen (wooden laths, etc., would equally serve), supported by a brick laid flat at each corner, laid over the plantation, and upon it put as many rhubarb leaves as covered it entire, for the purpose of shade. These not only protected from the hot rays of the sun, but at the same time kept a moist atmosphere underneath. When the leaves had become very shrivelled, I replaced with others. Occasionally a sprinkling of water was given when changing the leaves. The covering was given up as soon as I discovered they would sustain the sun without flagging. By this mode of treatment I find it not only to do without the expense of glass cover, but my plants are much more vigorous, being robust, and this summer have bloomed much finer than my other plants. The success, too, in the process more than exceeded my expectations. Out of five hundred slips inserted, only four failed.

Last year I put in the slips rather earlier (June 18), and they appeared admirably well by the end of August, the time I required them to plant my bed. I think it is better to be thus early, as the plants get stronger by the early part of September, the time of planting for a fine bloom the following season.

REMARKS ON THE ROSE DEVONIENSIS.

BY A NURSERYMAN AT EXETER.

I OBSERVE a correspondent has recently asked for some particulars relative to this unrivalled Rose, as well as the treatment it requires to have it bloom vigorously out-doors. In compliance with the request, I beg to state that the *Rose Devoniensis* is a hybrid seedling obtained from the *Yellow China Rose* (*R. ochroleuca*), but it is not known by what variety it was impregnated.

As regards culture, I may, however, say that I recommend its being planted against a wall, with either an eastern or a western aspect, as the colour will thus be much richer than if exposed to the full influence of the sun upon a direct southern aspect. The soil should be a good sound loam and *well-decayed* dung, in equal proportions, as it requires a *rich compost* to enable it to develope its very large double yellow flowers to full perfection, being frequently more than five inches in diameter. Nothing can exceed *their fragrance;* they are produced very abundantly, and expand without any imperfection. I hesitate not to assert that it is decidedly the finest Rose, taking it all in all, that exists in this country. One of the greatest excellences of this most lovely Rose is that, notwithstanding the great quantity of petals in every flower, or, as is technically said, the great quantity of stuff in them, they expand most fully and freely. It is one of the most charming ornaments when grown during summer, in the open-air bed. No doubt many of the readers hereof have seen the large circular beds of it in the Hampton Court flower-garden, where it grows vigorously, and blooms in vast profusion. The beds have a dry substratum, a very rich light loam, and gradually rise to the centre. The plants will bear taking up and repotting in the autumn, cutting them back freely in January, and turning out into the beds in April. In winter, the plants are preserved in a cool but *dry* frame. In warm and dry situations, the plants do not require taking up, but several inches deep of *dry leaves* being laid between them protect them through winter.

TREATMENT OF CAMELLIAS, TO HAVE A SUCCESSION OF THEM IN BLOOM FOR A LONG PERIOD.

BY JOHN WILLIAMS, ESQ., LEEDS, YORKSHIRE.

s an amateur florist my pet has been the culture of Camellias, and by a regular process in culture I have them in bloom for *nine months* in the year. I have my first lot in bloom in October, the time when my Chrysanthemums are, and I have a continued show till the end of June. I have two dozen in bloom at each time. The soil I pot in is one part turfy heath, two parts of rich turfy loam, to which I add another equal part, consisting of a portion of sharp sand, bone-dust, and charcoal, in small bits about the size of a field bean, and a similar quantity of well-rotted hotbed dung. These being incorporated well together, chopped, not sifted, for four months before using, make a compost for the plants I have never seen equalled elsewhere. In potting, I use a free drainage of turf cut into pieces the size of an Orleans plum, over which I place an inch of moss, and when putting in the compost in potting, I drop in a few pieces of gritty stone, in order to absorb any overplus of water. When I pot I take care to have the soil moderately dry, and in filling it in round the ball, to do it in regular layers, pressing it rather firm, so that no space be left. Many cultivators advise repotting just before the plants begin to grow. I think this plan better adapted for nurserymen, and those whose only object is to make wood. The production of blossoms is another thing; and in the case of luxuriant plants, this can only be done by a temporary check of some kind, the best of which is, in my opinion, limiting the supply of water at the root, and not calling a new series of fibres into play until the blossom-buds are decidedly formed. I repot Camellias soon after they have made their young growth—as soon as the young leaves are perfectly developed, and the end of the young wood at the point of junction with the wood of the former year begins to turn a little brown. The ball of the plant should be rather moist at shifting; and when it is in a pot-bound state, it should be immersed in tepid water for an hour, about three days previous, allowing a day or two for the superfluous water to drain away before potting; I place the ball immediately on the moss.

The thermometer is kept during the season of growth from 60° to 65° by day, and 50° to 55° by night. The treatment is now of a close and moist character, giving air in moderation and with caution every morning, from ten o'clock until noon, and then, unless very hot weather, shutting close up. A little fire-heat is given every morning, from seven o'clock until eleven, when it is taken away until four o'clock, and then applied for the evening.

When the young shoots become firm, the temperature is raised from 65° to 70° by day, and from 55° to 60° by night, and accompanied with a free circulation of air, avoiding all cold winds. The main business now is the concentration of those principles which form the future blossom-bud, now in an incipient state; strong action of the root with free watering, and an over-moist atmosphere, will readily convert the would-be blossom-bud into a second shoot. The plants are now very sparingly watered; in fact, a good smart syringing every afternoon, immediately the air was taken away, say four o'clock, is nearly sufficient. A little fire is made every afternoon, except on warm sunny days, about two o'clock; but it is put entirely out about five o'clock, as it is only requisite to warm the pipes or flues sufficiently to produce a genial vapour for the night; and half an hour after the fire is pulled out, the flues and floor are saturated with water, to be evaporated by the next day's ventilation.

When the bud is formed, it requires feeding, and the fire is dispensed with entirely, merely observing, in the case of sunny afternoons, to make free use of sun-heat, by shutting up the house early in the afternoon, say from three to four o'clock, according to the weather. Air is given freely at all opportunities, and the plants are syringed heavily at seven o'clock in the morning, and again at four o'clock in the afternoon, saturating the floors and flues, or pipes, with water in the evening. The plants are well watered at the root whenever they require it, using liquid manure from old dung, in the proportion of one part liquid manure to four of clean water. The plants now possess abundance of new fibres, and their powerful action, assisted by liquid manure occasionally, produces both a plump bud and a dark leaf, and enables the plant to store up abundance of necessary food for the expanding blossoms.

At the time of blooming three objects are kept in view, viz., the complete development of the blossom-bud; the retaining it on the plant as long as possible afterwards; and feeding the later blossom-bud. Free watering, and the use of liquid manure as before recommended, must be persisted in, avoiding excess. The plants require to be kept *entirely moist* at the root while in the flowering state, rather more so indeed than at any other period. Syringing is entirely dispensed with, and in lieu thereof a deposit of dew takes place every afternoon at three or four o'clock. My Camellias have been thus treated all the past winter; and as it requires a little nicety to produce this fine dew without at the same time producing drip, I must state how I have managed it. My fires, which are smouldered up in the evening about ten o'clock, burn but little all night, or at least as slow as possible; they are stirred up directly the gardener comes in the morning, and burn as brisk as possible until eleven o'clock, when they are put entirely out until four o'clock in the afternoon. During the time the brisk fire is kept up, all the air possible is admitted consistent with the weather, so that all damp is carried away, and the leaf and blossoms made perfectly dry for three hours. About two o'clock, the channels on the flues, which have become about the warmth of new milk, are filled full of water, and the floors are flooded as well. This produces a genial steam, which, instead of being forced immediately to the roof by a high temperature, to be condensed and become drip, floats over the plants, and is gradually condensed on the leaves and flowers, or remains suspended in the atmosphere. The flues are watered again at four o'clock, and the plants being now covered with dew, I find it expedient to give a little back air at the ventilators, and this remains all night. By these means my Camellias have been covered every night, through the present winter, with a dew exactly similar to that in a fine night in May out-of-doors. If, however, the weather is so severe that I cannot give air at all, I instantly lower my fires, and the house is kept at 50° heat.

When the plants have done blooming, the temperature is from 50° to 55° by day, and from 45° to 50° at night; the necessary consequence of which is, to cause a great number of wood-buds to push than otherwise would. It also tends to restore the exhaustion into which they have been thrown by blossoming, and render them more excitable when heat is applied.

THE FAILURE OF PLANTS BLOOMING AFTER REMOVAL FROM FRAMES, ETC., INTO SITTING-ROOMS.

BY A SUFFERER.

THE following remarks were drawn up by a friend of mine, with a view to send them for insertion in your Magazine, since then he has suddenly been removed by death to another world, but to a FAIRER CLIME. I discovered the article amongst his papers, and therefore forward it for insertion.—(W. HALL.)

In common with a numerous class of the subscribers to your excellent and useful publication, who have no greenhouse, and who trust to the ornamenting of their sitting-rooms by the removal from pits and frames, or from the open air, of their floral favourites, as these come into bloom, I have experienced much disappointment in the frequent failure of such bloom immediately on the removal of the plants into a sitting-room, as the beautiful class of Fuchsias, for instance, and unfortunately the objection lies against many others, though, perhaps, to few in the same degree. The amateur watches with delight a handsome plant bursting into bloom, and, to enjoy it the more, he has it carried to the house, where, with his other favourites, he may have it always before him; but, to his mortification, after two or three days pass, flower after flower, and bud after bud, drops off, and he soon finds his admiration limited to the beauty of the foliage.

This is an evil which all admirers of flowers have felt as a serious one; but I cannot think that it is one without a remedy, and that if the precise cause were better understood the grievance might not be obviated. Perhaps this may fall under the eye of some of your scientific readers, who, I am certain, would confer very great favour upon many of your subscribers, by one or more articles on the subject suited to the pages of your work.

It is undoubted that the dry atmosphere of a sitting-room is one ill fitted for plants, particularly such as are just introduced when coming into flower; and it is equally undoubted that over-watering, or an undue delay in giving water, will produce the mischief to which I have referred; but I doubt whether the first-mentioned cause be enough, in itself, if care be taken to guard against the others. In my own experience, I have sedulously watched the management of a Fuchsia in the circumstances mentioned, and thought that every precaution was taken against either over or under watering, while I have, nevertheless, been disappointed at finding that I could not preserve the flower-buds. Thence I conclude there must be other causes in operation, independent of the quantity or regularity of water supplied. The regulation of the air, it will be said, is the next point. True, and I have not omitted this—that is, in giving to the plants, during summer, as well as at other seasons, all the air possible, consistent with the use of the apartments in question.

The object of the inquiry, at which I have thus hastily pointed, is to ascertain what are the causes (beyond those inevitable ones already noticed, and I exclude all the notice of gas) which impede the bloom, or cause the entire dropping off of the flower-buds of plants in rooms where the strictest attention is paid to the watering and airing of the plants. To the amateur florist this is an inquiry of much interest, and while I hope that these hasty remarks may be the means of calling forth some scientific explanation of the causes to which I have referred, they may possibly induce some of your many readers, who have time and opportunity, to give their attention, in the way of experiment, to a useful and interesting subject.

New Manures.—An equally interesting subject for experiment by amateur florists would be in the guano, and other new and powerful manures lately introduced to use in agriculture. Amidst the pursuits of the florist, where rich and vigorous bloom, even in many cases at the sacrifice of the plant for the year, is so much an object, a vast deal will, some day or other, be done with these powerful auxiliaries, and those having time and opportunity ought to be at their experiments, and not be shy to communicate the results through such channels as yours. Much is to be done in this way, and the only caution necessary is to be sparing in the application of the powerful stimulants in the first trials.

TREATMENT OF BRITISH FERNS, ETC.

BY AN AMATEUR PRACTITIONER IN DERBYSHIRE.

At page 54 of last month's Magazine I observe a Floriculturist requests particulars of managing British Ferns in a ***cultivated state.*** I have long been an ardent admirer of this most interesting class of plants, as well as their allies "the Mosses and Lichens," and possess a very extensive collection. I shall be glad to assist a Floriculturist, who perhaps is only a beginner, and, for my first paper, I transmit observations on my pets, "***the Lichens and Mosses.***" The others shall follow.

The culture of these plants is a pleasing object, and many of them are comparatively easy; for example, the genus ***Marchantea***, all grow and flower freely in cultivation; many of the ***Jungermannias*** also grow and flower freely in a house; and I had for some years a plant of that pretty and rare *Cryptogama Bryumroseum* growing in a pot in a greenhouse.

I regret the absence of these interesting members of the vegetable kingdom in our botanical gardens, not even a square yard of ground being bestowed them amidst all the waste and grandeur around. After gazing upon huge plants, what an agreeable change would it not be to turn to a collection of Mosses in a shady corner, all correctly named. As a proof of their easy culture, it is only necessary to call attention to the difficulty of eradicating them where troublesome and out of place. Moist shady places in general are the situations which Nature has provided for them; and if success is wanted, her rules must not be deviated from. I believe there is a collection of Mosses still in existence at Chatsworth; and I have heard, from an eye-witness, that they are grown at Edinburgh, under the stage of a greenhouse, in pots, and are looking very well; those at Chatsworth are grown upon a rockwork. Pots are to be preferred, for two reasons,—water can be more judiciously given; tender varieties, liable to damp off in winter, can then be removed to airy situations and be duly attended to.

A low rustic house, built for the purpose on a north wall, or shaded by trees, where they could be protected in severe weather, is the best situation for their growth; this building can always be kept clean, and accessible even in winter. Fire-heat must be withheld; this would induce Mosses to produce leaves instead of fruit, by which annual species are propagated. Keeping them too close would have the same effect, consequently the weather must be very bad to prevent air being given.

The soil for potting must be varied according to the nature of the species. They are found upon loam, peat, sand, stones, or bricks, wood, and some even grow in water. The mode of potting requires a fuller explanation. Such as *Polytrichum juniperinum*, which roots in soil, may be potted in the usual way; only, instead of a single plant, a tuft, or number, must be put together; this must be done when the plants are young. If possible, obtain a good portion of native soil with them, as they will succeed better in it than any compost you can make for them. For those which are found upon rotten wood and decayed vegetable matter, such as *Hypnum striatum*, *H. undulatum*, etc., rough turfy peat, mixed with pieces of half-decayed wood, cloely packed, answers the purpose; on this the plants should be fastened down; or, if possible, obtain the piece of wood, or whatever materal they may be attached to, and fasten to the pot, without disturbing the roots. I have often found *Hypnum rutabalum* clinging to wood without any visible roots. Those found on stones must be treated in like manner, only substituting sandstone instead of wood. The aquatic species, *Fontinalis antipyretica*, is an example; it should be grown in water, upon stones or gravel. *Hypnum ruscifolium* grows on stones in damp places, and will do best in water, but not covered with it. The various species of *Sphagnum*, found in boggy places, and generally called *White Moss*, must be kept very moist; if kept under water, however, it soon dies. Mosses do not require potting so long as their drainage remains good, which is a point of great importance in their cultivation. I am decidedly of opinion, that this division of cryptogamic plants might be grown in pots to produce perfect capsules, at least such as do so in a wild state. *Bryum ligulatum* and some other varieties, although plentiful, are rarely seen in fruit; the former is scorched up in summer, yet, as soon as the autumn rains fall upon it, it springs again. It is a well-known fact that *Tortula muralis* fruits in winter, and that its spores are all dispersed in spring. Now, when bricks are taken out of the kiln in summer, after being red-hot, and laid down in a damp place where *Tortula muralis* had never been seen before, this plant may be seen in the following winter peeping out of the crevices, as if the germ had withstood the power of the devouring element. Where did the seeds of these come from, or, how were they preserved? Dr. Lindley, in his publication, "The Vegetable Kingdom," p. 66, makes the following remark, which bears on the subject:—"The first green crust upon the cinders of Ascension consists of minute Mosses, they form more than a quarter of the whole Flora of Melville Island; and the black and lifeless soil of New South Shetland is covered with specks of Mosses struggling for existence. How they find their way to such places, and under what laws they are created, are mysteries that human ingenuity has not yet succeeded in unveiling." From this it would appear that Mosses were the first inhabitants of our globe, at least on dry land, and that they first began to pave the way for the existence of man.

With regard to the propagation of this group of plants, no proper directions at present can be given; one thing is certain, they must be produced from spores in the first instance; and where perfect capsules are found young plants may be relied upon. There are some species, such as *Hypnum proliferum*, which, if the branches are divided, will root like a *Lycopodium*. To secure an ordinary collection, plenty will be found propagated by the hand of nature, even within thirty miles of London, and in most parts of remoter distances; in my own immediate neighbourhood they abound.

Lichens which can be cultivated are those found on the ground,—*Bæomyces*, *Peltidea*, *Scyphophorus*, and some species of *Citraria*. Those upon trees and stones are more difficult, especially the former; the latter, when removed on the stones to which they are attached, will live only for one season. I have kept *Scyphophorus paxidatus* and *S. cocciferus* in pots for two years, potted in lime rubbish, scraped off an old wall, where they were found. This wall was shaded in summer by fruit trees, and after the fall of the leaf it was exposed to the sun; here the plants remained, without receiving so much as a drop of water, excepting what they obtained from the clouds.

REMARKS ON THE CULTIVATION OF BEGONIAS.

BY KEWENSIS.

THIS beautiful and highly interesting genus is now become most deservedly popular, and its attractions very much increased within the last half-dozen years, by the introduction of many exceedingly handsome species and varieties; not only so from the *brilliancy* of the flowers, but their striking beautifully marked and shaded foliage; most of which you have described in your monthly lists of new and rare plants. There now are upwards of eighty kinds in our own country, and a collection of the handsomest ought to be grown in every stove; and as several will succeed well in the *greenhouse*, not one ought to be without them. I intend to furnish a *descriptive* list of all the *Begonias* for the following month's Magazine, and those which may be termed greenhouse plants will be pointed out.

In giving particulars of cultivation, I beg to observe that all the stove kinds enjoy a *moist* atmosphere of from 75° to 80° of temperature in summer, with a *slight shade* to break the rays of the *mid-day* sun. In winter, the atmosphere should be kept dry, especially in cloudy weather, and the temperature allowed to fall as low as 58°. It is worthy of remark, too, that even the greenhouse kinds are much benefited by heat and moisture during the *early part* of the season. As to the soil most congenial to their nature, there appear to be various opinions. From experience, I am satisfied that sandy loam and leaf-mould are the two principal materials; and for the kinds that grow luxuriantly, these should be used in equal proportions. For some species, such as *B. coccinea*, which are liable to damp off, the quantity of vegetable matter may be less, and the deficiency made up with silver sand. Damping, however, cannot altogether be attributed to soil, but must be ascribed to bad drainage, or to moisture when the plant does not require it.

In preparing the pots, some prefer small potsherds for drainage; this, in my opinion, is almost as bad as using sifted soil, for if the crevices are small, they will be the more easily filled up. For an eight-inch pot, which may be taken as an average size for growing a specimen plant, the potsherds should not be less than three inches across—the hollow pieces (not flat ones) are the best; and if laid to the depth of two or three inches, and properly covered with pieces of turf, there will be no danger of the roots suffering from damp, if water is judiciously given.

Begonias being, in general, plants of free growth, and delighting in fresh soil, it is necessary to repot them twice in the course of a year, viz., February and August; but this rule, like many more in gardening, is not without an exception; one plant may grow faster than another, under the same circumstances, and therefore ought to be repotted when it requires it, nothing being worse for any plant than to cramp its roots.

As Begonias are generally intermixed with other plants, and receive a similar supply of water, both in summer and winter, they may well present a sickly appearance. There are few plants that require a more liberal supply during summer than they do; indeed, some of the robust-growing sorts will flourish with their pots half immersed in water; but, like other plants, they require a season of rest, at which time comparatively little moisture is required. This period is clearly pointed out by nature. In October, all the species with which I am acquainted begin to show that water should then be gradually withheld; if it is continued, some begin to drop their leaves, others to decay at the root, or assume a languid appearance, therefore it is obvious that they should be kept dry from the 1st of November to the 1st of February. During that time, if water is given once or twice a week at most, it will be sufficient, and the herbaceous sorts may be kept quite dry. Although many species remain green and healthy in the early part of winter, the growth they make is but trifling, nor should they be induced to grow then, as a general rule; for if they are deprived of the season which nature has provided for *their rest*, the best of management will not compensate for it in twelve months afterwards.

There are some who imagine that a bushy plant cannot be produced unless it has been cut down in winter or pinched back during the growing season; but this is a mistake. If *B. undulata*, or any of the fibrous-rooted sorts, which require pruning, are cut down in winter, the root will in all probability die, and if pinched back, when are they to flower? To such as *B. Evansiana* the knife is never required, because the stems die down annually; and it is never necessary to cut such as *B. heracleifolia;* therefore this matter rests with the tall-growing sorts. To explain this, it will be necessary to consider what functions such stems perform. Take *B. undulata* for an example: every stem of one year's growth, notwithstanding its flowering, is a magazine, in which secretions are stored for the support, during a certain time, of those which may arise from its base the following season, and thus the stems become analogous to the pseudobulbs in Orchids; were this not the case, suckers would rise as strong without the stem as with it, and they would not be liable to damp off, although it should receive an injury. From this it is evident that all the pruning that is necessary is to cut out all the stems above two years old, and this should be done in spring, when the plant is repotted, in order to give room for the young shoots.

As to propagation, perhaps few plants are so easily increased as Begonias. All those from which cuttings can be taken will strike freely under ordinary treatment, and such as *B. Barkeri*, from which cuttings cannot be had, may be abundantly multiplied from seed. The seed should be sown as soon as gathered, in light sandy soil, and placed in a moist situation, where the seedlings may be shaded from the rays of the sun; and, when large enough, pot off singly, into small sixty-sized pots, and the growth be promoted, either in a stove, or hotbed frame, as much as possible, in order to get them strong before winter. During the period of *rest*, this first season, a little extra care must be given not to allow the roots to be *dust-dry*, or they will *shrivel* and be destroyed, but keep them *just damp;* and when the time arrives to start them into growth, give but a small increase of water, and that *gradually*.

A CHEAP AND SUCCESSFUL METHOD OF STRIKING CUTTINGS OF PLANTS.

BY AN AMATEUR LADY GARDENER IN SUSSEX.

HAVING several oblong-shaped shallow deal boxes, about six inches deep, early last spring I sowed in them various *tender* annual seeds, and placed the boxes upon the back shelf of a small plant-stove. At the time when I sowed the seeds, I had cuttings of several kinds of greenhouse plants I wished to strike, and thinking that if a portion of fine sand was placed around the side of the box, and the cuttings then be inserted firmly therein, they would probably take root. Fearing that, thus experimenting, I might not succeed as I hoped, I divided the lot of cuttings, and inserted the other half in the same kind of sand in pots, and placed them in the same situation as the boxes. Each were duly attended to afterwards, and the result was, far more of the cuttings struck in the *box* than in the *pot*, and a fortnight sooner. The porous nature of the wood, and the warmth it retains, I am certain very much contribute to promote the more *certain* and *early rooting* of the cuttings than those inserted in pots. I strongly recommend the adoption of this method to all amateur pot-plant cultivators; it is both *cheap* and *successful*.

NOTES ON NEW AND SELECT PLANTS.

51. **ORTISOPHON SPICATUS.** Nat. Ord. *Labiatæ* (*Salvia*, etc.) The foliage is very fragrant.. The flowers are large, white. The floral bracts are green, tinged with violet. It was originally introduced from Ocana, and requires a temperature similar to the Salvias. M. Linden has plants on sale.

52. **CALATHÆA PARDINA.** Syn. *Maranta pardina.* This splendid plant was discovered by M. Schlim, in New Granada, growing in damp shady forests. Each leaf is about one foot long, and nearly half a foot broad, of a lively green, and along *each side*, midway between the midrib and edge of the leaf, there is a row of *large*, regular, oblong-square spots, of a deep violet-black. The surface of each leaf having two rows of these very distinct spots, contrasts beautifully with the lively green ground-colour. The flowers are produced in a spike, half a yard high, each blossom being two inches across, of a pretty

bright yellow. It is highly entitled to a place in every hothouse or warm greenhouse. M. Linden has plants for sale.

53. CALATHÆA METALLICA. Syn. *Maranta metallica.* This fine species was discovered by M. J. Triana, in the pestilential forests of Choco, in New Granada. The leaves are large, of a dark green, intermingling on the surface with a *golden metallic* hue; along each side of the midrib is a dark velvety shade. The flowers are small, a violet colour, forming a cylindrical spike. M. Linden has plants for sale.

54. PINCKNEYA IONANTHA. This handsome plant belongs to the Natural Order *Rubiaceæ*, and the section in which are *Luculia*, *Rondeletia*, etc. M. Schlim discovered this species in New Granada. It is a handsome shrub, bearing its flowers in terminal corymbous heads. Each blossom an inch and a half long, hairy, and of a deep violet colour. M. Linden has plants for sale.

55. CINCHONA NOBILIS. Syn. *C. purpurascens.* The *Cinchona officinalis* supplies the Peruvian Bark of our spices. The *C. nobilis* is a magnificent plant. The leaves have a *satin-green* appearance, with the midribs of a rosy purple colour. The flowers are large, of a pure snow-white. It requires the stove temperature. M. Linden has plants of it.

56. MERIANIA MACRANTHA. It belongs to the Natural Order of *Melastomacea.* Each blossom is four inches across, of a beautiful rose colour, very handsome and ornamental. It deserves a place in every stove. M. Linden has plants of it.

57. ESCALLONIA DENSA. It forms a bushy shrub, having neat *shining*, small-sized foliage. The flowers are of a light rosy pink. It is a handsome plant, and as hardy as the other species we possess. M Linden has plants for sale.

58. APHELANDRA VARIEGATA. Nat. Ord. *Acanthaceæ.* It is a native of Brazil, an extremely handsome plant, and worthy a place in every stove. The plants at Kew are about half a yard high, moderately branched. Leaves large (nine inches long by four broad), strongly ribbed, and the lower portion of each rib (or vein) has a very distinct white streak. The flowers are produced in long terminal spikes (nine inches long), and arranged in four rows, of rich red orange-coloured scales; from each of these scales proceed (one at a time) the flowers, which are of a *Salvia-like* shape, and a bright uniform yellow. It is an excellent winter-blooming plant. (*Fig. in Bot. Mag.* 4899.)

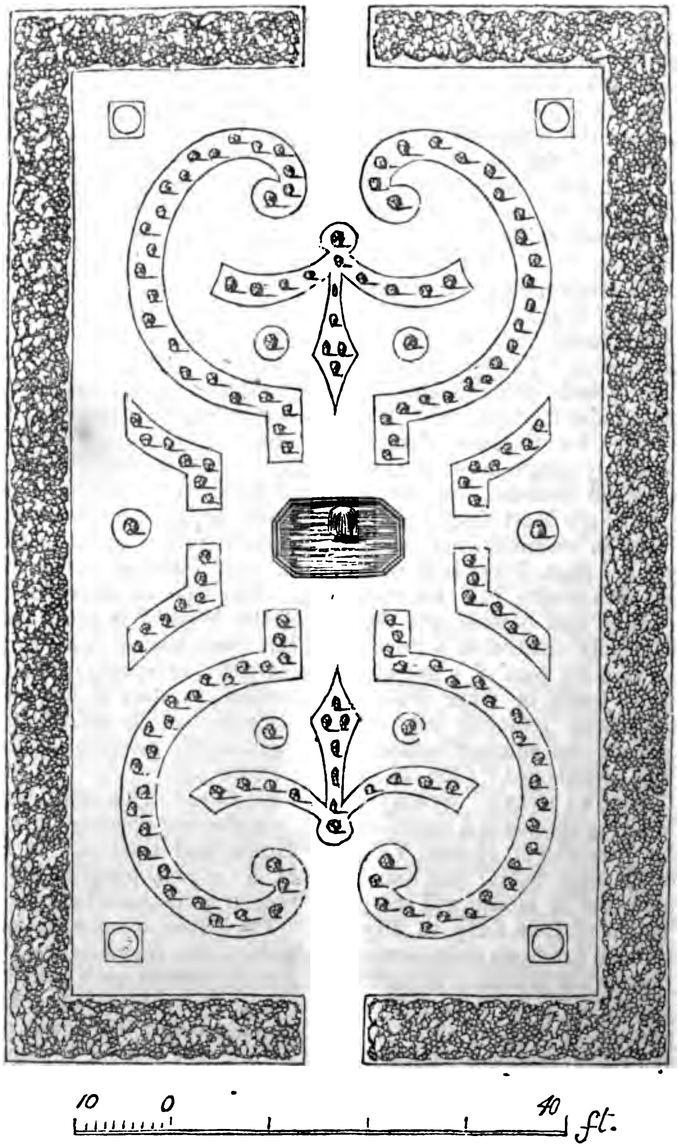
59. ARALIA PAPYRIFERA (*Rice-paper plant*).—This is the well-known "rice-paper" of the Chinese. Through the kindness of the Governor of Hong Kong, Sir John Bowring, and his son J. C. Bowring, Esq., a plant of it has been sent to the Royal Gardens at Kew, where, in a damp stove, it produced its fine branching large panicles of blossoms in December, 1855. The plant rises from five to seven feet high. Stem branching above, and about three to four inches in diameter, forming very little wood, filled with the most exquisitely white pith, of which the famous "rice-paper" of China is made.

The full-grown leaves are nearly a foot long, cordate, five to seven lobed. The panicles of flowers are at the extremities of the stem or branches. The description of a well-grown plant at Hong Kong is given as follows:—"Seven feet high, with a circumference of its terminal branches of twenty feet, and throwing out twelve to fourteen panicles three feet long, drooping like magnificent plumes in regular form over the large dark palmate leaves." It seems to be a native exclusively of the Island of Formosa, and no botanist has ever seen it in its native locality. By the continued exertions of Sir John Bowring, he induced the Chinese traders to procure living plants, when on their voyage to that island for the cargoes of stems to make their paper.

60. NYCTANTHES ARBOR-TRISTIS (*Night Jasmine*). Nat. Ord. *Jasmineæ*. This interesting shrubby plant is a native of India, and was introduced into England by Sir Joseph Banks. Sir William Jones tells us, "This gay tree (for nothing *sorrowful* appears in its nature) spreads its rich odour to a considerable distance every evening, but at sunrise it sheds most of its *night-flowers*, which are collected with care, for the use of the perfumers and dyers. My pundits unanimously assure me that the plant before us is their Sep'halica, thus named because bees are supposed to sleep on the blossoms." The leaves are heart-shaped, about five inches long. The flowers are produced in terminal corymbous heads, each having about a dozen blossoms. Each flower is similar in form to a *Phlox*, about an inch across, with a tube half an inch long. The tube is an orange-red, both inside and outside, and the rest of the blossom is pure white. It is usually treated as a stove plant, but when kept at *rest* through winter in a dry part of a greenhouse, and early in spring placed in a hotbed frame, or other similar temperature, to start it into early growth, then removed back to the greenhouse, it will flourish throughout the summer season. It is well worth growing in either stove or greenhouse. (*Fig. in Bot. Mag.* 4900.)

61. TECOMA FULVA. Synonyme *Bignonia fulva*. This most beautiful flowering species is a native of Peru; plants have recently bloomed in the nurseries of Messrs. Veitch, at Exeter and Chelsea. It is a shrub of *erect* habit; the branches are of a rich purplish-brown, *creeping*, and it is said will creep up trees, in its native situations, to the height of from forty to fifty feet. The leaves are pinnate, each having from five to six pairs, somewhat similar to the *Bignonia radicans*. The flowers are produced numerously, in large *racemes*, each terminating cluster of them having from twenty to thirty blossoms. Each blossom is tube-shaped, about two inches long, and at the widest part nearly half an inch through; they are of a bright red on the upper side, and an orange-yellow on the under side; very beautiful. It is worth a situation in every greenhouse. (*Fig. in Bot. Mag.* 4896.)

DESIGN FOR A FLOWER GARDEN.



THE beds in the annexed design are supposed to be laid down on gravel, with box or some other suitable material for edging. The circular beds are intended for masses, and the others for a mixture of flowers of the kinds most approved. A flower border may be formed inside the shrubbery, if more agreeable to the taste of the occupier. The small squares enclosing a circle are intended for vases, or for other embellishments; and the basin, with its fountain in the centre, may be furnished with gold and silver fish. A covered seat or alcove may be placed at the extremity of the garden, where the walk is indicated, if preferred.

MISCELLANEOUS.

OUVIRANDRA FENESTRALIS *(Water Yam, or Lace-leaf.)* Nat. Ord. *Juncagineæ.* This remarkable plant was first discovered in Madagascar, about sixty years ago, by Auburt du Petit-Thouars. Sir W. I. Hooker informs us that more than thirty years ago he received *flowering specimens* of it; but *now* living plants have been brought from Madagascar to this country, by the Rev. William Ellis, who has sent two plants to Kew, and has placed others under the care of Messrs. Veitch, at Chelsea. From a publication of Du Petit Thouars', where a figure of it was given, Mr. Ellis copied one prior to his late visit to Madagascar, and on his arrival he exhibited the sketch to the natives. He states, "At length I found one man who knew where it grew; his master, who had shown him many acts of kindness, allowed him to go in search for it, and after two or three days he returned, saying he had found the plant growing in a stream of water, but could not get to it, owing to the number of crocodiles in the stream; the late rains, it was said, had made these animals more numerous than usual at that particular place. At length, however, the man brought me a fine lot of plants in excellent condition. The natives describe this plant as growing on the *margin of running streams.* The root is sbout an inch thick, and six to nine inches long, often branching in different directions, like the roots of *ginger.* It is composed of a white fleshy substance, apparently without large or tough fibres, and is covered with a light brown skin. The roots of the plant adhere very firmly to the loam or clay of the river bank. This plant is valuable to the natives, who at certain seasons of the year gather it as an article of food, the fleshy root, when cooked, yielding a farinaceous substance resembling yam. It is not only a rare and curious but a singularly beautiful plant, both in structure and colour. From the several crowns of the branching root, growing often nearly a foot deep in water, a number of graceful leaves, nine or ten inches long and two or three inches broad, rise on slender stalks, and spread out horizontally, *just beneath the surface of the water.* The flower-stalk rises from the centre of the leaves, and the branching or fork-like head of flowers is curious; but the structure of some of the leaves is peculiarly so, and seems like *a living fibrous skeleton,* rather than a perfect leaf. The longitudinal fibres (commonly called nerves or ribs) extend in curved lines along the entire length of the leaf, and are united by thread-like fibres or veins, crossing them from side to side, at short distances from each other, forming a most beautiful ***network***, without the spaces between the veins being filled up. The whole leaf looks as if composed of fine tendrils, wrought after a most regular pattern, so as to resemble a piece of ***bright green lace***, or ***open needlework***. Each leaf rises from the crown on the root like a short, delicate-looking, pale green, or yellow fibre, gradually unfolding its feathery sides, and increasing in size as it spreads beneath the water. The leaves in their several stages of growth pass through almost every gradation of colour, from pale yellow to a dark olive-green, becoming, before they finally decay, brown, or nearly black; while air-bubbles of considerable size frequently appear under the full-formed and healthy leaves. It is scarcely possible to imagine any object of the kind more attractive than a full-grown plant, with its dark green leaves forming the limit of a circle two or three feet in diameter, and presenting in the transparent water, within that circle, leaves in every stage of development, both as it regards colour and size. Nor is it less curious to notice, that these slender and fragile structures, apparently not more substantial than the gossamer, and flexile as a feather, still possess a tenacity and a wiriness which allow the delicate leaf to be raised by the hand to the surface of the water without injury. The form of the leaf is *oblong*, rather blunt at the end, about eight inches long and three broad; the midrib and strong nerves extending lengthways, curve and meet at each end. If the slender cross-nerves or nervelets are examined under a microscope, they will be found to consist of ***very slender*** nerves, surrounded by a portion of parenchyma on each side; sometimes the parenchyma is extended, so that the open portion is of an oval form, and in some ***rare instances***, a leaf is formed of parenchyma, traversed by the slender nerves, and having an entirely undivided green surface. It is a most interesting and beautiful plant, being very easily cultivated in the stove or warm greenhouse. It merits a place wherever it can be cultivated. (***Fig. in Bot. Mag.*** 4894.)

CLIMBING ROSES IN POTS.—The present being the best time for planting and potting Roses (November), I forward the following extract on ***climbers***, in order to promote their more general culture in pots. I have adopted it for the last ten years with admirable success, and have some in bloom all the year. They should be invariably grown on their own roots; and being chiefly kept in pots, their cultivation may commence at any season we please. What we have hitherto been accustomed to regard as climbers are from the classes Boursault, Sempervirens, Ayrshire, etc. Magnificent as such must be regarded when growing in the open ground, often to the height of twenty feet, and covered with immense trusses of bloom, their semi-double and transient flowers render the greater part not altogether suitable for growing in pots. A growth not too vigorous, and finely shaped flowers, should be the criteria with regard to Roses grown in pots as climbers. As a great height, then, is not in this instance desirable, the various Hybrids, the Noisettes, and Bourbons may be chosen, and trained upwards to about three feet, which will probably be found as high as convenient or manageable; not that we would, however, altogether exclude the Ayrshire and Sempervirens, for among them a few admirable Roses are to be found. Now, one great point to be held in view is, to induce the plants to flower from the summit to the ground; for if a few flowers only are to be produced at the top of the plant, then the dwarfer it can be grown the better. This, complete flowering, judicious pruning, and training will accomplish.

TRAINING AND PRUNING CLIMBERS.—In training, they may be formed into any shape. Such varieties as have long twining or flexible shoots may be trained spirally, with which view, in pruning, in the first instance, they should be cut-in close, to induce them to form lengthened shoots, which should be trained in their proper course during the season of growth. By this treatment, in all probability, they will not flower the first year; but if, after this, the main shoots be merely stopped, and the lateral ones cut within a few eyes, an abundance of bloom will be secured the succeeding year. Any superfluous shoots may, of course, be removed; but under this system of growth a small amount of pruning only is necessary. The stiff, erect-growing kinds may be formed into short pillars of a pyramidal form, or trained to flat wires. The former presents the most natural appearance; and to effect this, from three to five shoots may be allowed in the first instance, and pruned of different lengths: these will throw out laterals, and a short pillar Rose is formed. In after seasons they may be pruned, as proposed for other Roses.

CLIMBING VARIETIES.—Here, then, is a list of such varieties as appear best adapted for this purpose.

TO TRAIN SPIRALLY, OR AS TWINERS. *Hybrids of the Chinese*—Beauty of Billiard, beautiful vivid scarlet; Blairii, No. 2, large blush pink; Fulgens, rich velvety crimson; General Kleber, purplish red, changing to violet; Hippocrates, deep crimson lilac; *Ne Plus Ultra, fine carmine; Pompon Bicolor, purple and crimson shaded; *Princess Augusta, bright crimson and purple mottled; Triomphe de Laqueue, red and purple, shaded. *Boursault*—*Amadis, purplish crimson; Gracilis, bright rosy red. *Ayrshire*—*Ruga, pale flesh; *Splendens, white, tipped with red. *Sempervirens*—Banksiaflora, white, centre pale yellow; Félicité Perpétue, creamy white; Leopoldine d'Orleans, white, shaded with rose; Myrianthes Rénoncule, delicate rose. *Bourbon*—De L'Isle, bright rose; Etoile de Lyons, purplish rose; Phœnix, reddish purple; Souvenir D'Anselmne, bright scarlet. *Noisette*—Desprez, rose and reddish yellow; D'Espalais, rose; Du Luxembourg, lilac rose, red centre; Fleur de Jeune Âge, white, yellow centre; La Biche, large pale flesh; Lemarque, fine sulphur yellow; *Prudence Rœser, lilac blush, sometimes rose, blooming in clusters.

TO TRAIN UPRIGHT, AS PILLARS OR PYRAMIDS. *Hybrids of the Chinese*—Aurora, crimson and violet shaded, sometimes striped with white; Belle de Rosny, delicate peach; Belle Marie, superb large rose; Brennus, rich carmine, large; Captain Sisolet, beutiful rose; Charles Duval, fine deep pink; Chénédolé, rich vivid crimson, very large; Dandigné de la Blanchaia, dark slaty purple; Duke of Devonshire, rosy lilac, striped with white; *Great Western, crimson and purple, very large, blooming in clusters; *Henry Barbet, deep vivid rose; Hybrid Stadtholder, fine light rose; La Grandeur, large rose; *Lord John Russell, brilliant even rose; Madame Plantier, pure white; Madame Rameau, dull violet purple, centre bright crimson; Paul Perras, beautiful large rose; Richelieu (Duval), pale pink, finely formed; Victor Hugo, large rosy lilac. *Hybrid Perpetual*—Dr. Marx, rosy carmine; Duchess of Sutherland, fine pale rose; Madame Laffay, brilliant rose, snperb. *Bourbon*—Bouquet de Flore, light carmine; Hennequin, bright crimson-purple, fine; Marquise d'Ivry, deep bright rose. *Noisette*—*Bouton Nankin, nankeen, changing to blush, distinct; *Fellenberg, bright crimson; *Euphrosyne, pale rose and yellow, very sweet. (*Paul's Treatise on Pot Roses.*)

QUESTIONS, ANSWERS, AND REMARKS.

TREATMENT OF THE JACOBÆA LILY.—*How am I to cultivate* these splendid Lilies?—*Lucy.* [Plant them in equal portions of turfy loam and sandy peat, with a free drainage of crocks and rough pieces of turfy loam. After potting, place them in a frame, with a gentle hotbed heat; when the flower-stem just makes its appearance, then remove them into a warm place in the greenhouse. If a portion be potted a little later in the season, they will succeed the others, and prolong the blooming season. A season of rest will be required from October to February. Withhold water after September 1st, and keep them dry till potting time in February.—*Editor.*]

THE OSAGE ORANGE.—Is it an established fact that this plant is to supersede the Whitethorn as a hedge plant? When I went to South Wales twenty-four months back, I found there some plants which had been imported from Philadelphia and planted several years; but they had only annually produced a few abortive branches and leaves, and had not made half an inch of wood in twelve months. It is true they were not planted under the most favourable circumstances, nor had they much attention afterwards; but Whitethorn, side by side with them, grew as well as it generally grows, making from one to three feet of good strong growth every season. In June last year, I had the ground dug round the Osage Orange, gave it a good coat of dung, and soaked the plants occasionally with manure-water. This moved the plants a little, but still I only got a straggling branch here and there, two or three inches long. I have read the pamphlet on this plant published by an American seedsman twelve or eighteen months back, and have seen the representations of hedges, which are certainly first-rate in every respect, but I am sorry my own experience does not accord with that published in America. I fear our summers and autumns are not warm enough to ripen this free-growing plant, that is, if it ever grows freely in this country, and hence it will suffer much from the winter's frost; but I may be mistaken. The examples above specified, however, warrant me in doubting this to be a first-rate plant for our climate, for if it will not grow in a dripping climate like South Wales, or if it will not bear comparison with the Whitethorn there, I fear it will not be of much value through the country generally.—*W. P. Ayres, Whittlebury Lodge.*

Handsomest, distinct, and showy Fuchsias.—Observing a correspondent requests a list, I forward the following, which I know cannot be excelled.

Finest Show Fuchsias.—*Autocrat*, Banks; tube and sepals crimson, with a very dark corolla; well reflexed. *Favourite*, Banks; brilliant scarlet tube and sepals, and a splendid violet-blue corolla, of thick substance; superb. *Beauty of the Bower*, Banks; rich scarlet tube and sepals, and a deep purple corolla; well reflexed. *Cartoni;* rich crimson tube and sepals, with a very deep violet corolla; very neatly reflexed. *Clio;* white tube and sepals, with a ruby scarlet corolla; free bloomer, stout flower, very handsome. *Duchess of Lancaster;* white tube and sepals, and a rosy violet corolla; it is beautifully reflexed, and very handsome. *Maid of Kent*, Banks; clear waxy-white tube and sepals, with a rich plum-coloured puce corolla; well reflexed and of good substance, and very pretty. *Lady Franklin;* pure white tube and sepals, with a purple-crimson corolla; well reflexed, and very fine. *Omega;* crimson tube and sepals, with a bright lilac corolla; free blooming, and pretty. *Perfection*, Standish; pure white, with blush-pink corolla; well reflexed; a very distinct, neat, and pretty flower. *Prince Albert*, Banks; tube and sepals a rich scarlet-crimson, with a deep violet corolla; well reflexed; a superb flower in all respects. *Perugino*, Story; tube and sepals large, scarlet, with a striking striped corolla, of very distinct rose and purple flakes; it is well reflexed, and handsome. *Princess of Prussia;* white tube and sepals, and the corolla a bluish carmine; large and handsome. *Queen of Hanover;* tube and sepals pure white, corolla a bright carmine, and prettily reflexed. *Thalia;* tube and sepals white, corolla deep rose; it has the charming habit of the *Duchess of Lancaster*. *Fairy Queen*, Banks; tube and sepals white, corolla a rich plum-puce colour; very pretty. *Hendersonii;* a very distinct *double* variety, tube and sepals rich crimson, the corolla a globular mass of rich purple velvet petals; a free bloomer, very handsome. *Climax*, Banks; tube and sepals a rich crimson, corolla large, of a fine blue-violet colour. *Lady Emily Cavendish;* tube and sepals pink, with rich purple corolla; very pretty.

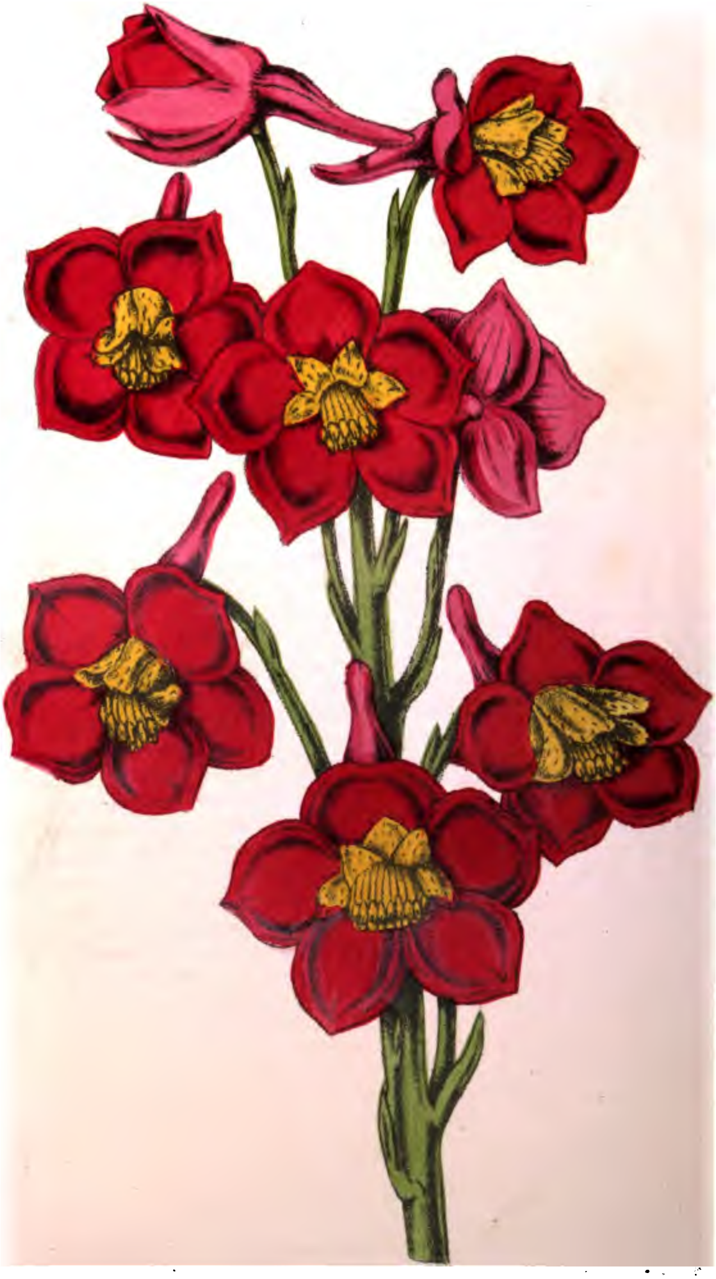
The following are the *new varieties* that have crimson or scarlet *tube* and *sepals*, with white corollas:—*Empress Eugenie*, Story; tube and sepals rosy crimson, spread widely, fully exhibiting the pure white corolla; very pretty. *Mrs. Story*, Story; scarlet tube and sepals, well reflexed, corolla white; of good substance. *Lady of the Lake*, Story; tube and sepals deep crimson, with a blush-white corolla; very pretty. *Queen Victoria*, Story; tube and sepals a scarlet-crimson, well reflexed, corolla clear white; very handsome. *Ranunculæflora*, Story; tube and sepals scarlet, with a *double white* corolla; very pretty. *Rouge et Blanc;* tube and sepals large, a deep scarlet, well reflexed, corolla white, very elegant. *Water Nymph*, Story; bright scarlet (globe) tube and sepals, corolla pure white; very handsome. *Raffaelle*, Story; tube and sepals crimson, well reflexed, corolla chocolate, with flaked stripes of rose; free bloomer, and very pretty.—*The Foreman of a London Nursery.*

The Belladonna Lily.—Observing in a recent number of the *Floricultural Cabinet* an inquiry made relative to the treatment required to have the beautiful Belladonna Lily bloom freely in the open border, I beg to state that I have had it bloom vigorously for many successive years, growing in the border of a south-aspected wall, planted within a few inches of the wall, in a deep rich sandy loam, on a dry subsoil. The bulbs are about six inches deep. I planted them (one dozen) in a row, at six inches apart, in the year 1840, and they have remained undisturbed ever since, and each year, from 1842, have bloomed vigorously. They do not do well when disturbed by dividing, replanting, etc., but planted in a situation like mine, and there allowed to remain, will realize every expectation.—*A Flower Gardener.*

Destroying the Mealy Bug.—In a late number, a *Regular Subscriber* desires to know the best mode of destroying the mealy bug; I therefore feel much pleasure in answering his query, as the mode I have always adopted has in every instance proved most satisfactory. The remedy is, simply to dust the plant or plants with tobacco snuff, and the mealy bug will in a few minutes cease to exist; as the snuff will not injure any plant, when it is applied in this way, it should not be washed off for some time, as the larvæ of the mealy bug is so very minute, thousands might escape untouched. I have also found it most efficacious in destroying the Aphis, and other noxious insects, on plants which will not bear fumigation. Any plant, however, dusted with snuff, should not be watered overhead, until it be clean washed, as the snuff when wetted on the leaves has an unsightly appearance.—*James Sharp, Clerk.*

CULTURE OF DAPHNE ODORA.—Observing in your valuable Magazine that one of your numerous subscribers requests to be informed of the best method of cultivating that much-admired plant the *Daphne odora*, and as it is now the blooming season with that deservedly esteemed plant, I should advise your correspondent to pot the plant in peat and sandy loam, or equal portions of peat and loam, with a little sand added, taking care first to drain the pot with plenty of drainage, that the plant may not get what is termed water-logged, which is very injurious to it. Particular care is requisite, too, not to let it get dry, for if it does, it often proves fatal to the scented flowers. I would advise keeping it in a heat of about 55 to 56 degrees, which is quite warm enough. The plant should stand in a window where it can get plenty of air. If your correspondent has not any greenhouse or stove, it is very injurious to plunge it in as a shrub in a conservatory or in any ground, as it keeps it too wet. Care should be taken not to *over-pot* the plant, as it seems to thrive best if rather under-potted. If your correspondent follows this treatment, it will, I have no doubt, be attended with complete success. With such attention we now have a splendid plant, blooming at every young shoot.—*W. Barnes.*

DAHLIAS.—There has also been a great loss in Dahlia roots this season. Now that we are propagating this flower, but little exertion is necessary to make a few more plants than are required for planting of certain varieties that should be grown in pots, for the purpose of producing small sound roots which winter easily, as well as being suitable for travelling to any distance. The following varieties seldom produce sound roots in the ground, and invariably perish before Christmas arrives, viz.:—Annie Salter, Bob, Marvel, Duchess of Sutherland, Bishop of Hereford, and George Villiers. It is as well to have a few pot roots of all the choice kinds, in case of failure in any of the ground roots. These will winter easily anywhere, if excluded from frost. Ground roots should be well dried before starting, and they keep very well in a dry warm cellar. Many persons have no other convenience than placing them under the stage of their greenhouse; this answers very well if they can be kept free from drip from above. By no means put them in a loft, unless it is heated, or the frost will find them out. The ground for growing the plants in having been trenched in the autumn, it will only be necessary to turn it over with the spade before planting, choosing fine weather, when the soil is dry. *Planting cannot safely be commenced before the first week in May,* unless protection is at hand for covering the plants during the night. Many—ourselves among the number—do not plant until the first week in June. Several spits of good rotten manure should be mixed with the soil immediately under the plant. If the soil is well prepared, and a good healthy plant put out, very early planting is unnecessary, to say nothing of the danger of losing the plants by frost. We cannot do better than repeat the following instructions:—"*To grow a good plant during the time it is in the pot, is of far more importance than early planting.* Pot them into four-inch pots, using rich soil; the pots should be drained with coarse partly decomposed leaf-mould, so that in planting out there will be nothing to abstract from the ball of earth. A good start is of great importance; therefore care should be taken that the plant is grown to a fair size, without drawing, during the time it is in the pot; the stouter it is the better, without being tall; and it should not be pot-bound at the time of planting out. Both the roots and the point of the plant should be in a thriving condition, and free from aphides. It may perhaps be unnecessary to state that the plants must be carefully hardened off before they are turned out. If the soil and plants are in a proper state, the first week in June will be a good time for planting out, and, with ordinary care and attention, good plants will be produced in time for the earliest exhibition. A short period will suffice to have plants of a good size; but it should be borne in mind that hours lost in repotting them when in a young state will make a difference of days in the time of blooming, and it is important that this should be clearly understood, that no neglect in the matter may take place. Examine the plants often, to see if any require water; by no means let them become dry so long as they are in pots. Secure them with proper and strong fastenings at the time of planting; water them whenever they require it, and sprinkle the foliage slightly with soft water almost every evening. Tie out the branches, and, as the plants increase in size, secure the side shoots firmly to extra stakes."—*Midland Florist.*



DELPHINIUM CARDINALE

The Floricultural Cabinet.

APRIL, 1856.

ILLUSTRATION.

DELPHINIUM CARDINALE (SCARLET-FLOWERED LARKSPUR).

The generic name *Delphinium* is derived from the Greek *delphin*, signifying a *dolphin*, because the flower-buds, before they are expanded, in shape resemble that fish. Its common English name of *Larkspur* has been given in consequence of the horn-shaped *nectary* of the flower being in form like the spur of a lark's foot. The French call it Knight's Spur and Royal Comfrey; the Italians, Little Spur and King Flower; the English, Lark's Claws, Lark's Heel, Lark's Toe, and Lark's Spur.

Gerard mentions the Larkspur amongst the flowers which were cultivated in the reign of Queen Elizabeth, but he does not seem to have been acquainted with any having *double flowers*. In the early part of the seventeenth century there were one or more varieties having *double* flowers, and which, we are told, were eagerly sought after. It appears to have been about the period when the *florimania* raged to such excess amongst the Dutch, that the first *double* ones were raised, as we find the double-blossomed noticed by Parkinson in 1629, who speaks of the great varieties of colours in these *double*-flowered Larkspurs; and he remarks that the loss of the spur occurred when the blossom was double. From the blue-coloured flowers a good ink has been made, with the addition of a little alum.

That a flower of so much elegance of shape and so beautiful in the variety of its colouring, as the Larkspur is, should have been suffered to pass unnoticed by English poets appears surprising; for the lively and delicate hues of the flower, as blue, rose, violet, white, pink, lilac, striped, and as in the instance of the superb *scarlet* which we figure, all these produce a most beautiful appearance in the flower garden, either grown singly or in masses. A bed of the dwarfer sorts of mixed colours is exceedingly handsome when in bloom.

In floral language, the Larkspur is made the emblem of *lightness*

—an appellation which the graceful airiness with which these flowers are placed on the branches truly justifies.

However handsome each, or all other species and varieties are, the one we figure far surpasses them, both in the symmetry of the plant and in the brilliancy of its *rich scarlet* flowers. The United States Exploring Expeditions met with this rare plant on their overland journeys to California; and Mr. William Lobb discovered it, too, in California, and sent it to Messrs. Veitch, in whose nurseries it bloomed the past summer, as also in the Royal Gardens at Kew. It is a hardy annual, blooming profusely, and will be an universal favourite.

STRIKING CUTTINGS OF STOVE AND GREENHOUSE PLANTS.

BY A PROPAGATOR IN A BELGIAN NURSERY.

When I obtain cuttings at a distance, I find it in most cases essential to success to have the ends which have been cut dipped in puddle, or stuck in a portion of clay, for the crude sap in the cuttings is not raised by endosmose, but by the process of evaporation; care is therefore taken that the surface of the cut does not become dry before being put in the earth, and air get into the lower end of the vessels, for as soon as this takes place only very strong shoots are capable of drawing up moisture, as has been proved by the experiments of various philosophers. The cuttings are therefore stuck in wet sand, clay, etc., if they cannot immediately be put where they are intended to remain, although it is better to avoid this. If, however, they are such as ought to lie a day or two, in order to ensure success, as some Acacias, etc., it is in a damp place; and the precaution is taken, if possible, to cut them again before planting. If the long-leaved kinds be stuck in the earth immediately after being taken from the parent plant, the inner bark will become black in from fourteen days to four weeks, and the cuttings will perish.

This phenomenon appears to be in close connection with the form of the leaves of these plants, as those of the Acacias have very small stomata. In their stead, on the other side of the leaves of the latter plants, are small dimples, lined with short hairs, which the Diosmas possess. Now, as the crude nourishing matter is drawn up through the open wood in its existing state, and received by the cutting, while the spongioles of the roots only imbibe it in a very thin solution, it appears that the above-named plants, on account of the peculiar formation of their leaves, cannot elaborate in any great quantity this gross nourishing matter; and hence arise stagnation of the juices, and the before-mentioned appearances. The good effect of leaving these cuttings lying, and thus interrupting the growing process, and preventing the superabundant rise of the crude nourishing matter, will be apparent; and this is the more probable, as it is usual, for the same reason, to put a piece of mould round the cut.

Cuttings of succulent or fleshy plants also lie for a time before planting, and on no account in a moist atmosphere, that the surface of the cut may be sufficiently dried. They retain so many watery particles in their cellular tissue that, when this is neglected, the face of the cut soon rots. The species of the families *Melocactus*, *Echinocactus*, *Mammillaria*, *Opuntia*, *Cereus*, etc., have an extremely thick bark, and a firm epidermis with very few stomata; on which account the process of evaporation is so slow that they remain alive for a long time, without receiving external nourishment. The dried cuttings of these plants therefore are generally planted in dry earth, and set in a bed or house filled with warm air, and are not watered till they have formed roots from the nourishing matter accumulated in themselves. The roots can scarcely ever penetrate the thick bark, and are produced between the wood and the bark. In some of the *Opuntia* and *Cereus* species, however, they come out of the bark at the side. The other succulent and fleshy plants which form side roots, such as the Aloe, *Haworthia*, *Sempervivum*, *Mesembryanthemum*, *Crassula Plumieria*, and its congeners, as well as all the Cacti, are watered as soon as they are planted. Lastly, plants with milky juice also require similar treatment, as they are equally liable to damp off.

As soon as a part of one of these plants is cut off, the milky juice exudes in great quantities, covers the whole surface of the cut, and hardens like caoutchouc, by which the vessels are all stopped up, and the ascension of the moisture prevented. Cuttings of Ficus and the dry roots of Euphorbia are put in water, where they remain twenty-four hours before they are put in the earth. The same end is also attained when they are put in dry sand immediately after being cut, and afterwards the sand and the milky juice cleared away. Only the succulent and very milky Euphorbias must lie for some time.

Although it is proved by the above that the cutting receives as much moisture through the face of the cut as it loses in ordinary circumstances by evaporation, yet no sooner is it placed in very dry air, or in a draught, or exposed to the sun's rays, than a disproportion takes place between them. When this is the case, more watery particles are lost through evaporation than are raised in the body of the wood, which is very easily perceived in fleshy-leaved plants. On this account, hotbeds and houses prepared on purpose for propagating are used, in which the outer air is excluded, a moist temperature maintained, and, in very warm sunshine, a dense shade is given. Bell-glasses are placed over the more difficult-rooting cuttings, to protect them from all external influences which might destroy them before they made roots. The most proper form of bell-glass is that which gradually tapers from the base to the top, as from glasses of this shape the moisture, which adheres to the inside in the form of drops, runs gradually off without the dropping so injurious to cuttings. This disadvantage is found in all other forms more or less, such as those that are round at the top, or cylindrical, with the top bluntly truncated; and also in beer-glasses, which are often applied to this purpose. The most unsuitable glasses, which are, however, much used, are those small at the base, and swelling out like a globe.

The enclosed air under the glasses will soon lose its oxygen, through the respiring process of the plants within, and also be vitiated by other exhalations; and if it is not changed, it generates mould, and the cuttings lose their fresh appearance. For this reason, the glasses, if possible, should be daily ventilated and wiped; or, what is still better, as it will entirely renew the air, dipped in a vessel of cold water, and well shaken, so that too many drops of water may not remain on the glass, although they are not so injurious to the cuttings. In an extensive establishment, this operation requires much time, and therefore round holes, of about half an inch to three-quarters of an inch in diameter, are made at the top of the glasses; a cork is put into it, and taken out or closed as is required, and these will prove very serviceable, if the pans stand on a warm platform in the houses or beds prepared for the purpose.

The cuttings themselves should not be stuck too close together, and all the leaves should be left on that are above the surface of the sand, soil, etc., which are essential for elaborating the absorbed and deposited nourishment; removing the lower leaves above the part not inserted has an injurious effect upon the cuttings of many kinds of plants.

(To be continued.)

THE TEMPERATURE OF HOTHOUSES.

BY WILLIAM WILLIAMS, ESQ., OF LIVERPOOL.

Some idea may be formed of the prodigiously increased drain upon the functions of a plant, arising from an increase of dryness in the air, from the following consideration. If we suppose the amount of its perspiration, in a given time, to be 57 grains, the temperature of the air being 75°, and the dew-point 70°, or the saturation of the air being 849°, the amount would be increased to 120 grains in the same time, if the dew-point were to remain stationary, and the temperature were to rise to 80°; or, in other words, if the saturation of the air were to fall to 726°.

Besides this power of transpiration, the leaves of vegetables exercise also an absorbent function, which must be no less disarranged by any deficiency of moisture. Some plants derive the greatest portion of their nutriment from the vaporous atmosphere, and all are more or less dependent upon the same source. The *Nepenthes distillatoria* lays up a store of water in the cup formed at the end of its leaves, which is probably secreted from the air, and applied to the exigencies of the plant when exposed to drought; and the quantity which is known to vary in the hothouse is, no doubt, connected with the state of moisture of the atmosphere.

These considerations must be sufficient, I imagine, to place in a strong light the necessity of a strict attention to the atmosphere of vapour in our artificial climates, and to enforce as absolute an imitation as possible of the example of nature. The means of effecting this is the next object of our inquiry.

Tropical plants require to be watered at the root with great caution, and it is impossible that a sufficient supply of moisture can be kept up from this source alone. There can, however, be no difficulty in keeping the floor of the house and flues constantly wet, and an atmosphere of great elasticity may thus be maintained in a way perfectly analogous to natural process. Where steam is employed as the means of communicating heat, an occasional injection of it into the air may also be had recourse to; but this method would require much attention on the part of the superintendent, whereas the first cannot easily be carried to excess.

It is true that damp air, or floating moisture of long continuance, would also be detrimental to the health of the plants, for it is absolutely necessary that the process of transpiration should proceed; but there is no danger that the high temperature of the hothouse should ever attain the point of saturation by spontaneous evaporation. The temperature of the external air will always keep down the force of the vapour; for as in the natural atmosphere the dew-point at the surface of the earth is regulated by the cold of the upper regions, so in a house the point of deposition is governed by the temperature of the glass with which it is in contact. In a well-ventilated hothouse, by watering the floor in summer, we may bring the dew-point within four or five degrees of the temperature of the air, and the glass will be perfectly free from moisture; by closing the ventilators, we shall probably raise the heat ten or fifteen degrees, but the degree of saturation will remain nearly the same, and a copious dew will quickly form upon the glass, and will shortly run down in streams. A process of distillation is thus established, which prevents the vapour from attaining the full elasticity of the temperature.

The action is beneficial within certain limits, and at particular seasons of the year; but when the external air is very cold, or radiation proceeds very rapidly, it may become excessive and prejudicial. It is a well-known fact, but one which, I believe, has never yet been properly explained, that by attempting to keep up in a hothouse the same degree of heat at night as during the day, the plants become scorched. From what has been premised, it will be evident that this is owing to the low temperature of the glass, and the consequent low dew-point in the house, which occasions a degree of dryness which quickly exhausts the juices.

Much of this evil might be prevented by such simple and cheap means as an external covering of mats or canvas.

The heat of the glass of a hothouse at night does not probably exceed the mean of the external and internal air; and taking these at 80° and 40°, 20° of dryness are kept up in the interior, or a degree of saturation not exceeding 528°. To this, in a clear night, we may add at least 6° for the effects of radiation, to which the glass is particularly exposed, which would reduce the saturation to 434°, and this is a degree of drought which must be nearly destructive. It will be allowed that the case which I have selected is by no means extreme, and it is one which is liable to occur even in the summer months. Now, by an external covering of mats, etc., the effects of radiation would be at once annihilated, and a thin stratum of air would be kept in contact with the glass, which would become warmed, and consequently tend to prevent the dissipation of the heat. But no means would of course be so effective as double glass, including a stratum of air; indeed, such a precaution in winter seems almost essential to any great degree of perfection in this branch of horticulture. When it is considered that a temperature at night of 20° is no very unfrequent occurrence in this country, the saturation of the air may, upon such occasions, fall to 120°, and such an evil can only at present be guarded against by diminishing the interior heat in proportion.

By materially lowering the temperature, we communicate a check which is totally inconsistent with the welfare of tropical vegetation. The chill which is instantaneously communicated to the glass by a fall of rain or snow, and the consequent evaporation from its surface, must also precipitate the internal vapour, and dry the included air to a very considerable amount, and the effect should be closely watched. I do not conceive that the diminution of light which would be occasioned by the double panes, would be sufficient to occasion any serious objection to the plan. The difference would not probably amount to as much as that between hothouses with wooden rafters and lights, and those constructed with curvilinear iron bars, two of which I had erected in my garden three years ago. It might also possibly occasion a greater expansion of the foliage; for it is known that, in houses with a northern aspect, the leaves grow to a larger size than in houses which front the south. Nature thus makes an effort to counteract the deficiency of light, by increasing the surface upon which it is destined to act.

The present general method of ventilating hothouses is also objectionable, upon the same principles which I have been endeavouring to explain. A communication is at once opened with the external air, while the hot and vaporous atmosphere is allowed to escape at the roof; the consequence is, that the dry external air rushes in with considerable velocity, and becoming heated in its course, rapidly abstracts the moisture from the pots and foliage. This is the more dangerous, inasmuch as it acts with a rapidity proportioned in a very high degree to its motion. I would suggest, as a matter of easy experiment, whether great benefit might not arise from warming the air to a certain extent, and making it traverse a wet surface before it is allowed to enter the house.

There is one practice universally adopted by gardeners, which is confirmatory of these theoretical speculations; namely, that of planting tender cuttings of plants in a hotbed, and covering them with a double glass. Experience has shown them that many kinds will not succeed under any other treatment. The end of this is obviously to preserve a saturated atmosphere.

The effect of keeping the floor of the hothouse continually wet has been often tried, and it has been found that the plants have grown with unprecedented vigour; indeed, their luxuriance must strike the most superficial observer.

To the human feelings, the impression of an atmosphere so saturated with moisture is very different from one heated to the same degree without this precaution; and any one coming out of a house heated in the common way, into one well charged with vapour, cannot fail to be struck with the difference. Those who are used to hot climates, have declared that the feel and smell of the latter exactly assimilate to those of the tropical regions.

But there is a danger attending the very success of this experiment, which cannot be too carefully guarded against. The trial has been made in the summer months, when the temperature of the external air has not been low, nor the change from day to night very great. In proportion to the luxuriance of the vegetation will be the danger of any sudden check; and it is much to be feared that, unless proper precautions are adopted, the cold long nights of winter may produce irreparable mischief.

I am aware that a great objection attaches to my plan of the double glass, on account of the expense; but I think that this may appear greater at first sight than it may afterwards be found to be in practice. It is, however, at all events, I submit, a point worthy of determination; and if the suggestion should be found to be effective, the lights of many frames which are not commonly in use in winter might, without much trouble, be fitted to slide over the hothouse, during the severe season; and in the spring, when they are wanted for other purposes, their places might be supplied at night by mats or canvas.

The principles which I have been endeavouring to illustrate should be, doubtless, extended to the pinery and the melon frame, in the latter of which a saturated atmosphere might be maintained by shallow pans of water. An increase in the size of the fruit might be anticipated from this treatment, without that loss of flavour which would attend the communication of water to the roots of the plants.

I have but few additional observations to offer upon the artificial climate of a greenhouse. The remarks which have been made upon the atmosphere of the hothouse are applicable to it, though not to the same extent. The plants which are subject to this culture seldom require an artificial temperature greater than 45° or 50°, and few of them would receive injury from a temperature so low as 35°. When in the house, they are effectually sheltered from the effects of direct radiation, which cannot take place through glass; but the glass itself radiates very freely, and thus communicates a chill to the air, which might effectually be prevented by rolling mats. With this precaution, fire would be rarely wanted in a good situation to communicate warmth; but in this damp climate it may be required to dissipate moisture. The state of the air should be as carefully watched with this view, as where a high temperature is necessary to guard against the contrary extreme. Free transpiration, as I have before remarked, is necessary to the healthy progress of vegetation; and when any mouldiness or damp appears upon the plants, the temperature of the air should be moderately raised, and free ventilation allowed. When the pots, in the proper season, are removed into the open air, it would contribute greatly to their health, and preserve them from the effects of too great evaporation, to imbed them well in moss or litter; as a substitute for this precaution, the plants are generally exposed to a northern or eastern aspect, where the influence of the sun but rarely reaches them, but which would be very beneficial if their roots were properly protected. The advantage of such a protection may be seen when the pots are plunged into the soil, a method which communicates the greatest luxuriance to the plants, but unfits them to resume their winter stations.

When a greenhouse is made use of, as it often is after the removal of the pots, to force the vine, the same precautions should be attended to as in the management of the hothouse, and the elasticity of the vapour should be maintained by wetting the floor; but after a certain period, a great degree of dryness should be allowed to prevail, to enable the tree to ripen its wood, and form the winter productions for its buds. In this its treatment differs from that of the tropical plants, which require no such change, and to which, on the contrary, it would be highly detrimental.

TREATMENT OF CAMPANULA PYRAMIDALIS.

BY MR. JAMES SMITH, OF CLARE CASTLE GARDENS.

This most admirable flowering plant does not obtain that degree of prominence to which it is so highly entitled, for when grown as it can be, no plant that I know is more ornamental. I have been very successsful with it, and send a detail of my treatment.

My method of growing this plant is, to sow the seed in March on a slight hotbed; when they have made two or three leaves, pot them off into three-inch pots, and place them in a close frame till they have made growth, then harden them off by degrees, and they will have filled their pots by May. Prepare a good rich piece of ground in an airy situation, and plant them out eighteen inches apart; let them remain till the following March, by which time they will have made good growth; take them up with good balls of earth adhering to them, and pot them in fifteen-inch pots, using the following compost: equal parts of well-decomposed horsedung, turfy loam, and leaf-mould, with a portion of silver sand, and good drainage. Place them in a frame or pit, which keep closed until they have made growth, shortly after which they will open their flower-stems; as they advance, keep them as close to the glass as possible, admitting a large portion of air through the day. As the spring advances, frequently syringe them, closing the pit with a humid atmosphere in the afternoon. When their flower-stems have attained too great a height for the pit or frame, remove them to the greenhouse or conservatory, placing them where they can receive a large portion of air.

By giving this old plant the treatment here detailed, it will produce flower-stems measuring from ten to twelve feet high. I am not acquainted with any plant more easy of being cultivated to perfection, or more useful for halls, verandahs, etc., when thus cultivated, as, from the substance of its flowers, it is capable of keeping in flower much longer, and can endure many situations which the majority of flowers cannot. I have seen it trained to fan-shaped frames, and in the pleasant summer months, when fire is not required, placed in front of the grate, and hence, as I presume, its name, Chimney Campanula. A friend of mine informs me that he could not flower the plant to his satisfaction until he turned it out of the pot into some good soil for a few months early in the season. With one in particular he had been highly successful; when it showed blooming stems, he took it up and put it in a large pot; it produced eleven fine spikes of flowers, and a more splendid plant could not be desired.

TREATMENT OF THE CHRYSANTHEMUM.

BY A NOBLEMAN'S FLOWER GARDENER IN HERTS.

SEVERAL years ago I turned out a fine collection of Chrysanthemums against a south-west aspected brick wall, where they have each year bloomed beautifully. During the last summer I visited a nursery garden near London, and observed, on a similar aspected border, a collection of Chrysanthemums had been planted out about four feet apart (a double row in an alternate manner), and the shoots were then laid into pots sunk in the border up to the rim, which made a complete surface of dwarf plants about six inches high. On inquiry I found that, when the plants pushed shoots in spring, only as many were retained as were required for layering, all others were pulled clean off: this furnished a nursery supply of dwarf plants for sale.

On arriving home, I had some of the strongest shoots upon my plants grown against the wall layered down into two rows of pots running parallel with the wall, and others into the border between the pots: in the rows there were, first a layer in a pot, and next in the border, etc. The pots were plunged up to the rims. When the layers began to push I had the leads pinched off, to induce the production of laterals, each being left about six inches high; this was done about the middle of May. The layers pushed side-shoots, which I allowed the uppermost row to grow to half a yard high, when I had each shoot stopped. The front row I stopped when they had got about eight inches high. Both rows were, by September 14th, beautiful bushy plants, and very liberally set with flower-buds, and they very amply repaid for the attention by a *fine bloom*. Having thus secured a supply of well-set blooming buds, I then severed the layers which were in pots from the parent plant, and then took the pot plants out of the border for blooming in the greenhouse, and allowed those which were layered into the border to remain for blooming in their situations, and thus they afforded me a fine slope of bloom, from the tops of the plants trained against the wall down to the outer edge of the front row of dwarf plants, which extended into the border seven feet from the bottom of the wall. The plants have been attended to with water in dry weather, but this duty was not often required that season. The soil of the border was *very rich*, a free supply of well-rotted manure had for years been given every spring.

This method of obtaining dwarf plants for the greenhouse is readily accomplished, requiring little attention during the summer besides stopping the leading shoots. It is far preferable to raising them in pots after the usual method; the plants are not liable to be injured by lack of water, etc., and they are much more robust in growth, and the flowers, I am persuaded, will be much larger.

By this mode of obtaining dwarf plants for the open border, a circular bed may be provided so as regularly to incline from the centre to the extent of the circle, or a sloping bank be covered with dwarf plants, from six inches high, in a profusion of bloom. Such would be showy and handsome objects, with their varied mingling colours, throughout autumn, and be especially admirable if within view from a sitting-room. It is my intention to fill up a bed or more, thus situated, with a portion of the plants I have raised in pots this season.

I intend to retain all the layered plants which are to bloom in the border in front of the wall, from which my supply of layered plants may be obtained next year.

SUCCESSFUL CULTURE OF THE NEAPOLITAN VIOLET.

BY MR. JOHN COX, FOREMAN IN A LONDON NURSERY.

I FIND that this Violet succeeds best when grown in equal parts of loam and sandy peat, and in a rough state. Of this compost, some time from the middle of April to the end, the bed is formed, and the surface very firmly trodden, and in it, the runners are planted in rows one foot apart, and six inches in the rows. As the runners begin to spread they are cut in, and much of the success depends on the plants being closely cut in until they are taken up for potting.

Stirring up the soil between the plants, and due attention to water are essential during the summer, and in very hot weather mulching is very beneficial, keeping the roots cool. Shading the bed, too, greatly contributes to promote a profuse and vigorous bloom, as well as preventing the plants being attacked by the red spider, to which, when exposed to hot sun, they are very liable. I prefer their being grown in pots, for they flower not only as large, but more profusely than when grown in the soil of a frame-bed; in the latter situation the plants run too much into stem, foliage, etc. The pots being nicely mossed and in profuse bloom (having had 100 expanded at once), are pretty for a room. The flowers, too, are more readily gathered when in pots.

The plants are taken up at the end of July, or early in August; they are potted in six or eight inch pots, and are placed upon ashes, with a layer of salt underneath, to prevent worms getting into the pots. The plants must not be allowed to flag for want of water. To bloom them well, a little bottom heat is essential; I half plunge the pots. All air possible is admitted before noon, and shut up early enough to have a little sun heat. A few pots taken in weekly will give a plentiful supply, and readily obtained, from October to April, when we expect a supply from plants in the open air. I consider shading in hot weather highly beneficial.

There are several kinds of this class of Violets now grown. The one sold as the Tree Violet, which is known as the Perpetual and Chinese, is the most profuse bloomer, and is an excellent forcer. It will produce flowers from September to May; and being trained to become erect, with a stem eight or more inches high, forms an interesting object. The flowers are of a deep violet-blue, and very double. The Russian Violet (double variety) has flowers of a similar colour; it blooms up to the middle of June. The flowers are of a similar colour to the former, but not near so fragrant. This is the kind usually sold in the flower markets, and to give a stronger perfume, flowers of the former are mixed with the latter.

The Neapolitan Violets. Of these there are the double white and double blue; they are more tender than the previous-mentioned kinds. The white is very fragrant, and the pure white intermingled with the violet and blue produces a pretty effect.

A FEW REMARKS ON FORCING CROCUSES.

BY A PROVIDORE FOR COVENT-GARDEN, LONDON.

It is a common complaint that "the Crocus bulbs purchased last season did not flower; the leaves grew very rapidly and long, but we had not a single flower." The reason of this is obvious, it is simply this—they were put into too high a temperature. Crocuses will bear but little heat, and if you wish to grow them as you would like them to be (I am now speaking of in-door culture), I would recommend the following treatment, or something near it. Plant as early as you can get them (which will be in September, do not defer it later than October), in a pot, saucer, beehive, hedgehog, or anything you please, in moss, sand, or mould: give them a good watering after planting, and afterwards keep the mould, etc., a little damp until they are in a strong growing state, when they will require a constant supply of water. Keep them where there is no fire or artificial heat, such as on a staircase or room window, giving them all the light and air possible. About the middle of January you may, if desirable, put them into quarters a little warmer, but in a window, so that they have plenty of light, and no doubt the result will be a fine display of bloom.

THE CAUSE OF DOUBLE FLOWERS.

BY MR. CHARLES MOORE, WHITBY HALL, DEWSBURY, YORKSHIRE.

Conversing with a friend, a few days back, on the most certain way to obtain the greatest quantity of double Stocks from seed, we were led to speak of the origin of double flowers in general, and that, generally speaking, the cause was little understood. The result of our conversation induced my friend to transmit me the following remarks upon the subject, which, after reading, I forward for insertion in the *Cabinet*, thinking, when the cause is generally understood, attention will be additionally given to it in a practical manner.

A highly concentrated state of the sap in plants induces the production of flowers, and before the petals, pistil, and stamens can be formed, it must be perfectly elaborated; thus perfected, they have a higher state of existence than the leaves, which are the lowest, stem and petals next, after which the pistil and stamens, and, finally, the fruit. This perfect elaboration can only be obtained by a due degree of light and height, etc.

When, however, double flowers are produced, it is generally by a change of the higher parts of the existence, of stamens and pistils into the lower state of petals; and the more the plant is checked by a poorer soil, and a sparing supply of water for a period, the more likely, by giving luxuriant food and treatment afterwards, to bring back the pistil and stamens to a grosser and lower stage of existence to petals, and thus produce double flowers. The greater the check given, the more powerful will be the effect of after luxuriance when shifted into a rich soil, placed in due heat, properly supplied with water and every requisite attention; with the greater vigour there will be a flow of crude sap, and the flower is not only then produced larger, but the crude sap has a tendency to lower the state of existence, and the stamens and pistils being higher in the scale of existence, are reduced to the more inferior condition of petals. Sometimes the scale of existence is so far reduced, that what had been originally the nucleus of a branch, but elevated by elaboration acting on the vital energy into the state of petals, stamens, and pistils, is not only reduced to petals and become double, but will shoot again into a branch, as we have had instances with Brown's Superbe, and other Roses. The double *Lychnis diurna* has the stamens changed into red petals, and the pistil into green leaves, and the quantity of each greatly increased. In the Rhododendron, the flowers are produced from the terminal bud of the shoot; if the summer and autumn have been warm, the bud swells larger, and we have a branch of flowers instead of a branch of leaves the ensuing spring; but it is always difficult to say, till the bud is evolved, whether we shall have leaves or flowers. In raising double or full flowers from seed therefore, we should carefully guide our attempts by experience; in procuring the seed, we must get it from the *most double flowers we can*, as the progeny always bears more or less resemblance to the parent. In the Dahlia, the flower is not, strictly speaking, full; it belongs to the compound class, in which a great number of florets are arranged on one common receptacle; in single Dahlias, and other flowers of this class, the ray or outer row of florets has the petals fully evolved and coloured; in the florets of the centre or disk, the petal is only in the state of a small tube, inside of which the stamens are situated. Rich cultivation forces these tubes to assume the state of coloured petals; sometimes tubular, as in the Quilled Dahlias, and sometimes floculose or flattened, as in others; sometimes the stamens are changed into petals, sometimes they are abortive, but generally both these and the pistillum are unchanged, and hence there is little difficulty in getting seed from Dahlias. Plants that are full of double flowers at one time, when the plant is vigorous, will change and come more single when checked by bad weather, or when the plant begins to ripen and get woody.

To return to the raising of seedling double flowers. Roses, Pinks, Carnations, and Ranunculus change the stamens only into petals; sometimes these are only partially so in very full flowers, and seed is comparatively easy to be obtained from them: we should, as before observed, select from the fullest and best flowers. In the Anemone, the pistils are changed into petals, the stamens unchanged; seed of these can therefore only be obtained from flowers not perfectly full, or by impregnating flowers nearly single, with a tendency only to fulness, with the anthers of full flowers. In Stocks and Wallflowers, both stamens and pistil are changed into petals; seed cannot therefore be had from full flowers in these sorts, and the only resource we have is to save seed from those in which a tendency to fulness has commenced, by having a petal or two more than usual. In growing Stocks from seed, they will be more likely to be double if the plants are checked first by a deficiency of nourishment, whether of water or manure, and afterwards excited to luxuriance by a plentiful supply; and the greater the change, the greater the likelihood of success. Old seed, or seed dried, gives a check; we have had instances of old neglected seed, which had been reckoned very inferior when the seeds were fresh and new, come almost every plant double, when a little had been left over and sold when old. The seed for raising double flowers of any sort can *hardly be too old*, if it will grow at all; and the weak plants, first stunted and then luxuriated, will be found most successful; the seed should be sown on heat, and the weak plants *most cared* for. After flowers have once been produced double or full, the habit of coming double will be retained, if kept so by rich cultivation. When any variety has begun to sport, the plants should be raised off those individuals which have not yet sported, as the sporting habit might become fixed; and this should be carefully guarded against, by propagating from those roots that show the fullest flowers. The double China Asters, Feverfew, Rockets, Daisies, etc., come double in the same way as Dahlias. The double Snapdragon is similar to the Stock. Campanula, Cistus, the Thorn, and most other double flowers, are similar to the Rose. Thus, by attention, have many of our English plants been induced to produce double flowers, and so, no doubt, would be the result with others, both domestic and foreign, if attention were duly paid to the subject.

BUDDING AND GRAFTING THE RHODODENDRON, ROSE, ETC.

BY THE FOREMAN OF A LONDON NURSERY.

OBSERVING in a late number of the *Cabinet* some remarks on increasing the Rhododendron and similar shrubs, as well as Roses, etc., and now being the season for operation, has led me to forward the following observations on the process of budding and grafting.

The success of budding depends greatly on the state of the stock; if this is growing vigorously, and the bark flies up quite freely on the introduction of the budding-knife, the budding will hardly fail of success; if the young shoots of the stock are nearly ripened to the top, the bark is in the way of beginning to fasten to the wood; or if the shoots are small and weak, and the plant unhealthy, the bark most likely has not risen at all; in either case, the bark will not rise freely from the incision with the handle of the knife, the sap is not circulating freely, and it is in vain to attempt introducing a bud by forcing up the bark. The bud should be chosen from a vigorous young plant, the shoots from old trees have not so much sap or vitality; and the bud should be chosen when the bark is beginning to assume a ripe colour: if too ripe, it does not rise so freely from the bark, and vitality is beginning to get dormant; if too green, it is apt to perish before uniting to the stock. The buds should be tied as soon as possible after the operation, to exclude air from the wounds; but if the stocks are vigorous, drawing very tight is not of so much consequence here as in grafting. When buds are nearly ripe, in which state they succeed best, the piece of wood which unites the bud to the branch is apt to break off far in, and leave the appearance of a hollow eye. Some operators attach great importance to this, and say that, though the bark live and unite, the bud will not push in the spring; but I have frequently inserted buds with very hollow eyes, and marked them for the purpose of experiment, and they always pushed as well as the others: the sap of the tree should soon fill this hollow. Much of the success also depends on having the edges of all the cuts smooth, and the operation done as speedily as possible; if the edges of the wound are rough, the vessels of the liber, where the living principle is most active, are bruised and lacerated; and, if long exposed to the air, they begin to spoil. The common method of extracting buds is to cut away a piece of the shoot, and afterwards extract the wood; but this destroys the very sharp edge of the knife, and the cut will invariably be found more or less rough. The bark should be cut all round the bud to the shape and size wanted, and the thumb pressed against the cut portion, at the side of the bud; if the shoot is growing and healthy, the bud will separate freely, and there will be no laceration of the edge; the bark will be cut as smooth as a piece of cheese, and the edge of the knife will be kept sharp, as no wood needs to be cut through. As far as mechanical operation is concerned, this cutting smooth is of far more importance than any method of inserting the bud; if the bud does not squeeze freely off the branch with the side of the thumb, it is very doubtful of succeeding.

Much of the success of grafting depends on keeping the alburnum, or newest layers of wood and liber, or inner bark of the stock and graft, closely united and pressed together, till a complete union takes place; it is in the bark and soft wood that the development is most rapid, though all the cellular tissue is capable of uniting. For this purpose they should be as near of a size as possible, and the slice from each should be very small, allowing as much of the alburnum as possible to remain on both; it is there where the sap rises; and if the slice is made, either in graft or stock, through to the heart-wood, the ascent of the sap is stopped, except by the edges. The graft should not be put on till the stock has commenced to grow, when the new layer of inner bark is about to be formed, and the efforts to unite commence; both stock and graft are apt to dry and shrink, or cling, and thus part from one another, if done long before the commencement of growth. The grafts should be taken off before they begin to spring, and their ends inserted in damp earth; as they will cling more if taken off after they have begun to swell by growth, and thus part more from the stock. Also, if the living principle is set in motion by the commencement of growth before taking off, and then checked by taking off, or by cold weather succeeding warm, the graft will perish more readily than if the growth of the stock had commenced first, and the graft been fed from the union of the tree; for this purpose, the grafts of deciduous plants should be taken off before they begin to swell in the bud; as, if growth has commenced, it will proceed further in the graft, though off the plant, and be hurtful. Neither seeds nor cuttings will perish near so readily when in a dormant state, as when life is set in motion, and then checked. To prevent clinging or shrinking, choose well-ripened wood. The young shoots of young trees, or the bottom growths of old trees, are generally more vigorous than the extremities of old trees, vitality is most active in these young shoots; but in grafts that have the young wood soft and apt to cling, choose strong, vigorous, two or three years old wood. Many grafts that succeed with difficulty, if the grafts are retarded, the old wood chosen, and the stock allowed to spring before grafting, will succeed in this way, when they will do so in no other. Much of the success, however, depends on the warmth of the weather keeping the sap flowing. Moist warm weather is good, but heat is the principal requisite, the stocks being already established; and wet weather is very often cold in spring. The mechanical part of the operation depends on the slopes of the cuts being made to fit one another exactly, which is easiest done by choosing the slopes of the graft to fit those of the stock as nearly as possible, by thin slices being taken off each; by using a thin-backed, broad-bladed, sharp knife; and by drawing the hand straight without twisting, when making the cut. The graft and stock must be hard pressed together, without shifting, in the tying, which is best done by a smart hitch or pull, every time the wet bast ligature passes the graft in the act of tying, and not by continued pulling. The above remarks apply chiefly to whip-grafting, which is the most common. Crown-grafting is that most practised for old trees; and the necessity to take off the grafts, and allow the stocks to push, is here absolute, as the operation cannot be performed properly till the bark rises freely from the stock. When the bark rises freely, success is very certain in this way, if the grafts are strong and not sprung, as the flow of sap causes union to take place speedily, and the strong bark keeps the graft in its place. If the bark and wood of the stock do not separate freely, it is in vain to attempt grafting in this way. Grafting soft evergreens, as Rhododendrons, Daphnes, etc., is best done by waiting till growth has fairly commenced, either the first, pushing in spring, or the second, in summer, and inserting the graft in the manner of a bud, by opening the bark of the stock. The grafts of these must not be taken off till needed, as they are not dormant, like deciduous grafts, and more apt to perish. The bark will not rise till growth has fairly commenced, and dull, cloudy, moist, warm weather suits best; if dry and sunny, they should be shaded. With evergreens a few leaves are left on the top of the stock to draw up the sap, and to carry on the growth; it is useful in the grafting of all soft evergreens.

Increase by layers is often adopted with evergreens, and is generally successful where circumstances admit of it. Take care to tongue the layer close under a side bud, and keep the tongue quite open, and the part above the tongue to be made as perpendicular as possible, the two being at right angles, which causes the sap to accumulate, and so form a swelling of cellular matter at the bottom of the tongue, from which the roots proceed. A little fine sand put round the cut prevents the wound corroding in heavy soils, and by pressing on the bark, as in cuttings, promotes the rooting. The layer must be kept steady by a peg, but where the shoot is long, and likely to be shaken by wind, etc., that must have a support to be tied to.

ROCKWORK AND ROCK PLANTS.

BY F. E., COUNTY OF DURHAM.

As I have taken a good deal of interest and have had some experience in forming rock or stone work, and cultivating suitable plants for it, I comply with the request of Georgiana Elizabeth, in the February number of the *Floricultural Cabinet*, to supply some account thereof; but her question is very vaguely put, neither stating what space is to be occupied, or what kind of rockwork is desired, and therefore I may enter into some details which may be considered superfluous, for the chance of supplying what may be acceptable.

Mrs. Loudon, in page 257 of her very useful work, "The Ladies' Companion to the Flower Garden," says, "There are two sorts of rockwork, that which is intended to imitate natural rocks, and which must be formed of large detached pieces of real rocks, and that which is meant merely as a nidus for the cultivation of rock plants." Now the first of these is very difficult to obtain, and very expensive to remove any distance. The second can only be employed as a receptacle for plants, in the same way that baskets and other elevations are used, and must be very limited in size. I consider a third sort, and the most generally seen, to be composed of comparatively small pieces of lime, or other stony substances, arranged *grotto*-like, on a larger or smaller space, as may be required.

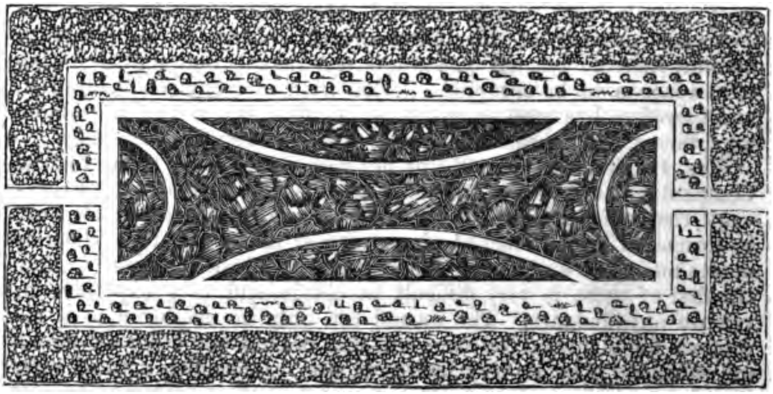
I think any sort of rockwork placed on a "flat lawn" objectionable, and quite out of keeping with *turf*, the beauty of which depends on its softness, smoothness, perfect neatness, and everything opposed to opaque and rough stones; indeed, so incongruous does such a union appear to me, that I would never place turf at the foot of ***real rocks***, as is often done.

The intent of the turf, whether large or small, should be lengthened as much as possible to the eye which views it; any beds placed on it should either be level and strictly defined; or if baskets or other elevated stands are used, they should have slight pedestals, to allow the smooth turf to spread ***under*** their broader surfaces. I like to fancy, if the beds were raised by a magic power in the air, they should leave a verdant surface beneath.

If a lawn is very large, it will probably have recesses, or assume a wilder character towards the ends, paths to shrubberies, etc., in which rockwork might be introduced, without detriment to the central verdant harmony; but for the trim, smooth, velvety surface, on which the most dainty foot might rejoice in a satin slipper, I say ye nay!

Much has been lately said about rockwork banks for Ferns, which might advantageously be used wherever a good slope could be made; it would be most suitable as a boundary to any piece of ground. Roots and stumps of trees are quite as good, if not better than stones, for this purpose. All plants delight in decaying wood, which their roots soon penetrate into, through any soil in which they may be planted, and with which it soon amalgamates.

If a good or rather rare collection of rock plants is wanted, it is best to apply to the eminent nurserymen, who are constantly adding to their collections. My own rockery (of which the ground plan and sketch are here delineated) is chiefly filled with ***wild*** plants. It was intended the large kinds should occupy the top, and the smaller and choicer the lower recesses; but finding the former quite overgrew and destroyed the latter, and that the situation was unfavourable to tender things, it remains in a wild but "much-admired disorder," bearing in mind it was formed to occupy a piece of waste land (an old pond filled up), surrounded by trees which did not favour any



other disposition. On it are all the large hardy Ferns, which grow most luxuriantly; many kinds of the Cranesbill, or Wild Geranium, including *pratense*, *sylvanium*, *pictum*, *sylvatica*, *phæum*, *lucidum*, *Robertianum* (Herb Robert) pink and *white* (rare), and many others, whose distinctive names I am ignorant of. The variegated Nettle (both purple and white flowered) is a valuable plant to cover space; it flowers early and long, and continues in foliage all winter. The yellow Nettle from Clifton and Malvern is a pretty plant; also *Sedums*, *Saxifrages*, and *Cistuses*. For *creepers*, the Periwinkles and *Lysimachia* (Moneywort); all the Primroses, single and double, and others of the *Primula tribe* (for ever honoured and loved be *Scotica*, flowering in February); single and double Wood Anemone, the latter called in Ireland Pearl-pins; *Myosotis*, early and late, blue and *pure white*. The wild *Oxalis* (or Wood Sorrel) makes a beautiful edging round the stones, like a fringe, and spreads in that way without overpowering. I have many scarce wild plants, which can only be obtained by time, and from their respective localities.

Amongst cultivated *dwarf* plants, I would particularly recommend a most beautiful but much neglected plant, the *Linum flavum;* it is not very hardy, but has lived out several winters: it is good to keep a young stock in reserve, by cuttings. The *Veronica saxatile;* the variegated and common *Arabis*, both purple and white; the dwarf *Epilobium; Claytonias*, white and pink; the *Coronilla coronaria*, a lovely creeping plant, flowers for a length of time; and the Shamrock is interesting and attractive, from its brown foliage,—I have found it much sought for. These are all perennials, and improve each year, barring accidents.

If a *dust* rockery is intended, the half-hardy tribes present an endless list of blushing honours, amongst which the *Mesembryanthemums* hold a distinguished place. So many others crowd their pretensions, it is almost impossible to name them.

I have only to add, all rockwork should have a good *solid foundation of paving-stones*, bricks, or any other available rubbish, to prevent it sinking.

CULTURE OF LOBELIAS.

BY MR. JOHN FOSTER, WELLINGTON ROAD, LONDON.

THE genus Lobelia comprises plants of much interest to an admirer of flowers; some of them exhibiting blossoms strikingly elegant, brilliant, and beautiful, and of a commanding figure in stature; whilst others, more humble in growth, are equally pretty and pleasing. In the former class, the plant rears up its splendid spike of the richest possible hue; the other, in prostrate beauty, displays a carpet of simple, yet engaging elegance.

Thinking a few hints on the culture of a number of the Lobelias would be acceptable to the readers of the *Cabinet*, I was induced to draw up the remarks here transmitted for insertion therein.

The Lobelia was so named by that eminent French botanist Father Plumier (who discovered the first species of it in America), in honour of Dr. Lobel, a learned botanist, who published the figures of a great number of plants at Antwerp, in 1581, and two or three other gardening books before that time. The genus is now ranked in the class *Pentandria*, and order *Monogynia*, although formerly classed in *Syngenesia*. The natural order is *Lobeliaceæ*, very closely allied to *Campanulaceæ*, from which their colour alone distinguishes them.

Lobelia cardinalis and *siphilitica* are natives of Virginia; *fulgens* and *splendens*, natives of Mexico; to which must be added the following hybrid productions raised in this country, viz.: *fulgens multiflora, lateritia, refulgens, pyramidalis, Queen Victoria, grandis, Bathania, Chalmeri, Topaz, longiflora, longifolia, siphilitica alba, Altontowriensis, Milleri, purpurea nigra, coccinea, coccinea superba, densiflora, dentata*, and *cærulea*. These are upright-growing kinds, in the way of *L. fulgens;* they are most beautifully distinct in colours, and blooming from the beginning of June to the end of October, are exceedingly valuable as ranking among the most striking ornaments either to adorn the greenhouse or flower garden. This section has been, within the last four years, enriched by a considerable number of beautiful hybrids, viz.: *Ajax*, damson; *amœna*, light blue; *azurea*, sky blue; *Belle-pyramidale*, plum colour; *cardinalis alba*, white; *cœlestis*, violet-plum colour; *compacta*, fine blue; *episcopalis*, light lavender; *Favourite*, violet; *fulgens grandiflora*, deep crimson; *Roi Leopold*, deep blue; *insignis*, deep scarlet, very dwarf; *longifolia*, lilac; *l'Etoile du Matin*, violet; *purpurea*, purple; *marmorata*, blue and white; *Queen Victoria superba*, brilliant scarlet; *magnifica*, rich crimson-scarlet, immense size; *St. Clair*, scarlet; *siphilitica*, blue; *Vesuvius*, violet-crimson; and *Vierge Marie*, white.

All Lobelias are poisonous, though some have been used medicinally, as *Lobelia siphilitica;* hence its name. *L. cardinalis* is used as an anthelmintic, or destroyer of worms. *L. inflatus*, a very active emetic—I believe the most active known. *L. Tupa* yields a dangerous poison; the smell frequently causes headaches. *L. longiflora* is a most venomous plant; when taken inwardly nothing can stay its effects, and death is the sure consequence. I have inserted these remarks, more closely allied to botany than other parts of gardening, as a warning to any inexperienced persons (whom the splendid colour of the flower might deceive), considering that the names of all, and more especially such dangerous plants, cannot be too fully impressed upon every one's memory.

L. cardinalis and *siphilitica* can be propagated in the best manner from seeds, which ripen well in this country. All the other sorts I have named above can be propagated from seeds, offsets, and cuttings. I take off the suckers in October, and put each one in a pot, protecting them in a frame during the winter, forcing them gently on a dung hotbed, and shifting the plants into larger sized pots at various times, as they require it. The compost I use is made up of yellow loam, and a small quantity of leaf-mould and sand mixed with it. The period when they require this repotting is from February to May. At the commencement of the latter month I remove them into a greenhouse, retaining such as I purpose for ornamenting the house during summer, and harden the others gradually to bear the full exposure of the open air. By this time they will have just begun to push forth flower-stalks, and some of the hardened plants must then be placed in water—if there is the convenience of an aquarium, so much the better; if not, a saucer filled with water is a very good substitute. Other plants must be planted out of pots in the open beds of the flower garden, keeping the balls as entire as can be done. They will begin to flower in June, and, if shaded, will last for many months in brilliant bloom. Shading is a general rule for all *high-coloured flowers*, such as *Achimenes coccinea*, *Crassula coccinea*, etc.

Propagation by cuttings is very frequently adopted. In June, take a young stalk, and divide it into lengths of five or six inches each; plant them under a hand glass, upon a border having an eastern exposure; water occasionally. Cuttings thus put off, strike with remarkable facility, and will be well rooted in a month, when the young plants may be managed as above directed.

As the plants always bloom the first or second year, it is the best plan to raise a good supply from seed. It should be sown immediately after it is ripe, and be protected under a frame. In the spring, the seeds will begin to vegetate and the plants appear; they should be transplanted into pots, and repotted as they require it during the year. The spring following they should be put into pots sufficiently large to give full scope to their roots, when they will be in flower about July.

The suckers should be taken off every autumn; for, if this is neglected, the plant will very likely be lost, as the stem will die down and rot; thereby weakening, if not destroying, the growing plants.

With the little trouble in culture above described, they will form one of the greatest ornaments in the flower garden. I have them frequently four feet high.

RAISING RANUNCULUSES FROM SEED.

BY A TWENTY YEARS' PRACTITIONER, FALKIRK, N. B.

SHOULD you think the following worthy a place in your Magazine, I should feel obliged by your inserting it in an early number.

Ranunculus seed is to be procured from *semi-double* flowers; care should therefore be taken to save it from such as are possessed of good properties, viz., such as have full strong stems, a considerable number of large well-formed petals, and rich good colours, chiefly preferring the darker, but not to the exclusion of the lighter coloured when their properties answer the foregoing description. The seed should remain on the plant till it has lost its verdure, and becomes brown and dry; it may then be cut off, and be spread upon paper, in a dry room, exposed to the sun, that every degree of humidity may be exhaled from it, in which state it should be put into a bag, and preserved in a dry warm room till the time of sowing, otherwise it will be in danger of contracting a dampness, which will soon produce a mouldiness that will infallibly destroy it. January is the proper time to sow the seed; and in order to prepare it, it must be separated from the stalks to which it is connected in the following manner, viz.: in the first place, it should be taken out of the bag and spread thin upon paper, a tea tray, etc., and placed before a moderate fire, till it is just warm, and no more; the seed will then easily scrape off, by means of a penknife; but great care must be taken to avoid scraping it off in lumps, or suffering any pieces of the stalk, dried petals of the flower, or other extraneous matter to be mixed with it, which would create a mouldiness, when sown, of very destructive consequence; when the seed is scraped in a proper manner, it will have the appearance of clean coarse bran, with a little brown or purple speck in the centre of each cuticle, which is the kernel.

When the seed is thus prepared, it should be sown on a shallow frame provided with glasses, similar to those made use of for cucumbers and melons; the soil should have been previously taken out, three feet deep, and spread thin upon the ground till it has been perfectly frozen throughout, in order to destroy any vermin it may have contained. When the pit is filled up again with the frozen lumps of earth, it should remain till the whole mass has thawed and subsided to its pristine bulk, or nearly so; its surface should then be made perfectly smooth and even, and the seed sown upon it with the utmost regularity, in such a quantity as nearly to cover it; the glasses should be placed over it immediately, and the frame kept closely covered with them, for two or three days, till the seed begins to swell and soften; a little light earth should then be sifted upon it, through a fine sieve, but not sufficient to cover it; this should be repeated once or twice a week, till the greater part of the seed disappears: it is proper to remark that such seeds as happen to be covered deeper than the thickness of a half-crown piece will never vegetate, and must, of course, inevitably perish. It is necessary that the seed be kept moderately moist by gentle watering with soft water that has been exposed to the sun, but too much moisture is nevertheless injurious.

About the time that the plants begin to appear, it is requisite to stir the surface of the earth with a pin, just sufficiently to admit air, and give liberty to the young plants to pass easily through; this operation should be very carefully performed, to prevent breaking off the fibres, or raising and leaving any of the plants out of the earth, because one hour's sun upon such would certainly destroy them

After the plants are all up, and their two interior leaves appear, more air must be given, by having hurdles or lattice-work substituted for the glasses; watering must be regularly continued in the manner before described, when the long continuance of dry weather renders it necessary; but fine warm showers of rain are always preferable, when they happen in due time.

This kind of management is to be continued till the roots are matured, and fit to take up, which is known by the foliage becoming brown, dry, and nearly consumed. The roots are to be dried and preserved in the usual way, and to be planted the same time as large ones in the autumn; the greater part, or such as have two or more claws, will blow in tolerable perfection the following summer.

PLANTING RANUNCULUS, ANEMONE, HYACINTH, AND OTHER KINDS OF ROOTS, IN THE OPEN BORDER.

BY A LONDON FLORIST.

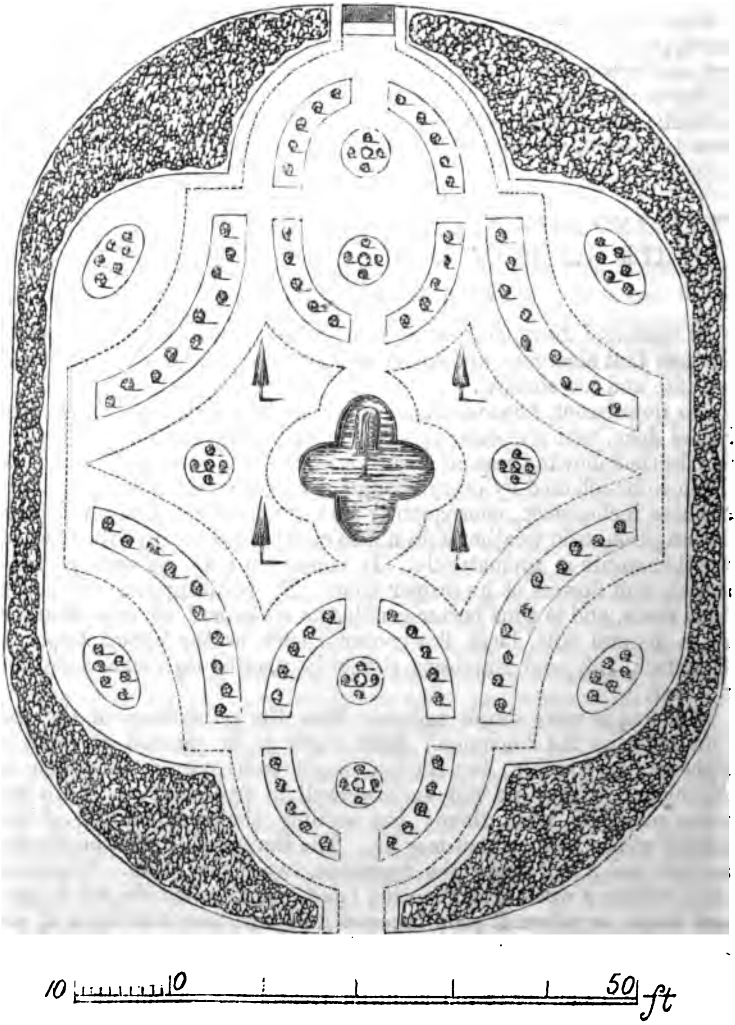
FAILURES and disappointments in their flowering chiefly arose from the fact that amateurs, and sometimes professed gardeners, plant them too late and too shallow.

No flower-root, however small, ought to be planted less than four inches deep, with the exception of the Ranunculus and the Anemone, and for the following reasons:—A flower-root at four inches deep is less liable to be affected by every change of weather than one planted two or three inches deep, consequently its vegetation continues with less interruption, cold weather does not so easily check its growth, or warm weather excite it prematurely. It comes on with its own peculiar season, and flowers at its proper time. By planting early it makes good roots, and is thus better enabled to withstand adverse weather. As a general rule, large flower-roots, such as the Crown Imperial, Hyacinth, Lily, and Narcissus, should be planted six inches deep, and not less.

Nothing is more simple and easy than the cultivation of the Ranunculus and the Anemone. Both ought to be planted as early in February as possible; but the beds ought to be prepared for them in November, as they do not succeed well in fresh-dug soil. Do not make composts, avoid them; but manure the common soil of the garden well, whatever that may be. The Ranunculus must be planted an inch and a half deep; the Anemone, two inches deep. Top-dress them within a week after planting (particularly when the soil is light and sandy, or where it soon becomes dry) with one inch thick of old manure, such as the remains of a cucumber or melon bed.

Failures in the flowering of the Ranunculus and the Anemone are nearly always owing to too artificial treatment. Admirers of these very ornamental flowers should bear in mind that they bloom in the hottest and driest months of the year, and being planted near the surface, the soil soon dries out to their roots; that the best way, therefore, to retain a proper quantity of moisture to carry out their growth, or to prevent too great evaporation of the ground, is to top-dress them, as already described.

DESIGN FOR A FLOWER GARDEN, BY T. RUTGER, ESQ.



The design for a flower garden herewith presented is surrounded by a shrubbery, the shrubs for which should be of the choicest kinds. The circular beds are intended for masses, and the remainder to be filled with a variety of flowers, such as may be in accordance with the taste of the proprietor. The pond in the centre should have a fountain, and stocked with gold and silver fish. There is a seat indicated at the extreme end, which may be covered with trellis-work and creepers, or an alcove may have the preference. It is not intended that the scale should be exactly arbitrary, a little deviation may take place as it regards the walks, beds, etc. The walks and the ovals surrounding the two circular beds, in each, are intended for gravel, with box or other kind of edging and the central compartments for grass.

CULTURE OF LESCHENAULTIAS.

BY CLERICUS, SOMERSET.

Having frequently seen plants of *Leschenaultia formosa* and *L biloba* go off in the winter season, which, according to my own experience, proves there must be some mismanagement, as in numberless instances they do not even survive the first winter. By proper culture, however, they can be grown to a large-size, as much as from three to five feet high, and as much round, covered with a mass of bloom. In this state nothing can be more beautiful, and this may be accomplished by practising the following rules:—Having procured some healthy plants, be very careful not to give them any check; place them immediately in the greenhouse, as near the glass as possible, and give them moderate waterings. They should be potted very carefully at all times, as soon as they require it. Success depends, in a great measure, on the compost prepared for them, which should be of the following materials, well mixed together:—Take equal parts of heath-mould, leaf-mould, and good rich loam; and then add a fourth part of charcoal, lime rubbish, and small bits of broken pots; mix all well together, and be sure to give a good drainage at the bottom of the pot. The Leschenaultias require but moderate supplies of water in the winter, but as the season advances give it more freely. These plants should be always kept in the greenhouse, giving them a good supply of air when the weather is favourable. If these few hints should be the means of preserving any of those most beautiful plants from an early death I shall be highly gratified, and the end would be fully answered for which I forward them.

CULTURE OF THE RANUNCULUS.

BY MR. GEORGE LIGHTBODY, OF FALKIRK, SCOTLAND.

Agreeably to your request, I now send you a few observations on the culture of the most beautiful and regular of all the florists' flowers—the Ranunculus. I lay no claim to being a standard authority, but merely intend to state my own practice, the result of many years' experience; and the success by which it has been attended is known to too many for me to attempt anything like exaggeration.

Another object I have in view is, that your periodical offers a greater certainty of its preservation for reference than the columns of a newspaper. Beside, many persons apply to me for instructions: I shall in future refer them to the Number of the *Cabinet* in which this may appear, for writing such long details, and so frequently, has become rather irksome. Should I make any discovery at a future time that may be advantageous, I will with much pleasure communicate the same.

The situation best adapted for Ranunculus beds is an open level site, free from eddy winds and fully exposed to the sun.

Preparation of the Beds.—It is of great importance to have the beds prepared in a proper manner. I strongly recommend this work to be done in August, not later than the beginning of September.

My reasons for this early preparation are twofold. Fine weather may almost be depended on at this period, for the purpose of having the soil thoroughly sweetened, by turning what is intended for the surface of the beds frequently to the action of the sun. It also allows ample time for the consolidation of the beds, so as to make them retentive of moisture, to ensure a strong bloom.

There must be at the least two feet of good soil in depth; if there is not, the substrata will require to be removed, and replaced with rich soil of a retentive nature.

My practice is to remove the surface of my beds annually to the depth of nine inches. The subsoil is then turned up a whole spade in depth, and well broken. I usually allow my beds to remain in this state for a day or two, to sweeten the subsoil as much as possible, by exposure to sun and air. I then throw into the beds about four inches of old cowdung not less than one year old, breaking it well. I then sprinkle over it some new slackened lime, finely sifted; shake up the dung so that the lime may penetrate through every part of it, to destroy all the worms; after this rake the dung level, and fill up with the soil intended for the surface; as the beds subside, fill up with soil reserved for the purpose.

The benefit resulting from the use of lime is, it corrects the acidity in the dung, and the cultivator will not be troubled with many earth-worms in his beds, casting out his roots and making their ugly casts on the surface, also making the soil pervious to the drying winds of spring.

For my subsoil I use a rich, clayey, friable loam, very retentive; but I prefer a rich light soil for the surface.

During the preparation of the beds, destroy everything that appears in the shape of vermin in the soil; soil for the Ranunculus cannot be too free from these pests. If there is wire-worm, spare no labour to eradicate them; catch them and break them, give them no quarter, for they are the most destructive enemy that the florist has to encounter.

The best edging for the beds is a neat wood, one rising about two inches above the level of the paths; it harbours no vermin, and its utility will be perceptible when we come to the planting time.

Rake the surface of the beds occasionally; and during frost, break the surface with a spade, and pile up the frozen clods to allow the frost to penetrate as far as it will, but don't disturb the dung. Rake the soil level when a thaw takes place; this helps to keep the soil sweet, and destroy any vermin that may be in it.

Planting Time.—The time for planting will vary in the different portions of the island. In the southern part, spring is earlier by a fortnight than where I reside. A few degrees of latitude make a sensible difference in climate, therefore cultivators must be guided by the climate of their respective localities.

After the middle of February, when the surface soil will rake easily, and the weather is dry, I commence to plant. The beds must be full up to the wood edge, and quite level. This is best done by a piece of board extending across the bed; and two persons causing it to rest on the wood edge, and drawing it from end to end, will speedily remove any surplus soil, and leave the bed perfectly level. Then mark on the wood edge the rows—say four inches and a half apart for the old varieties, and five and a half for the new. If the beds are four feet wide, twelve or fourteen roots of the old sorts may be planted in each row, but ten of the new will be found sufficient, in consequence of their more vigorous habit. The best way to plant is to mark across the surface for each row. Then excavate with a trowel to the depth of one inch and a half. To ensure the exact depth, I use a piece of wood with a notch cut at each end, the requisite depth, which is pressed into the drill till the projecting parts rest on the wood edge (the back of it serves for levelling the beds). In planting the root keep the crowns up; press the claws into the earth firmly, to prevent worms casting them out, but take care not to break them. Two persons, after a little practice, will plant a large quantity in a little time by this process.

Management from Planting Time till Blooming Time.—The roots, after having been in the ground for a few days, swell to three times the size they were when planted. Should very wet weather occur, and afterwards sudden and severe frost, which is often experienced at this early season, there is danger of some of the roots being destroyed. In this case, it is advisable that some old mats or dry litter of any kind should be laid over the surface of the beds, to prevent the frost penetrating to the roots. The beds can be cleared when a favourable change takes place. By the middle of April the plants will all be up. They frequently rise so strong as to displace the soil about them. Look over them and take the displaced soil, break it, and put it about the neck of the plants. When the foliage of the plants has attained to the height of two or three inches, then is the proper time to stir the surface of the beds; do this carefully to the depth of two inches between the rows, but don't go so deep close to the plants. Break the soil fine, and keep it level. Take care that the plants are not disturbed nor their foliage injured. See that the soil is gently pressed around the neck of the plants, to keep out the drought. Persons who grow Auriculas will find it good practice to reserve a portion of their old compost, and after the beds have been stirred, strew it equally over the surface to the thickness of about a quarter of an inch. This serves for a top-dressing, and gives the beds a neat and finished appearance, and helps to keep out the drying winds of spring.

During April and May, should the weather prove hot and dry, it will be of advantage to the plants to water occasionally; this must be gone about with judgment, for in the event of frost taking place through the night, the foliage would suffer and the plants receive a check. When there is no appearance of frost, water liberally with rain or pond water, administered between the rows with the pipe of a watering pan held low, so as not to make holes in the soil. Spring water should never be used till it has been long exposed to sun and air, to soften it and raise its temperature.

Look over the plants occasionally previous to the bloom, for at this time they are liable to receive damage from cuckoo spit harbouring in the foliage, and a small destructive caterpillar that lodges in the embryo blooms, eating out the whole of the petals, and leaving nothing but the empty calyx.

(*To be continued.*)

REMARKS ON THE TAMARISK, OR TAMARIX.

BY A COUNTRY CURATE.

> "On yon rough crag,
> Where the wild tamarisk whistles to the sea blast."
>
> H. DAVY.

THIS beautiful flexible shrub, highly ornamental for the shrubbery, is the *Myrica* and *Tamarix* of the Latins. This latter name is supposed to have been derived from the Hebrew *Tamaris (abstersio)*, on account of its abstergent qualities. It was a celebrated medicinal plant with the ancient Arabians, from whom the Latin authors seem to have borrowed their knowledge of the virtues of this plant; and the high encomiums which these Æsculapian writers bestowed on the Tamarisk, induced Grindal, Archbishop of Canterbury, to introduce it into this country, as a specific in disorders of the spleen. Camden, in his Life of Elizabeth, notices that the Tamarisk was first brought into England by Archbishop Grindal; and in the Remembrances for Master S., by Richard Hakluyt, 1582, we are told, likewise, that "when this archbishop returned out of Germany, he brought into this realm the plant of Tamariske from thence, and this plant he hath so increased that there be here thousands of them, and many people have received great health by this plant."

Dr. Turner writes fully on this plant, in his Herbal, which was published in 1568, when it appears to have been unknown in this country; for he observes, "it may be named, in English, Tamarisk, because, as we want the bushe, so also we have no name for it in England." This author tells us, that he "saw it in diuerse landes in Italy, in an yland betwene Francolino and Wenish, in Germany, in diuerse places about the Ren, not far from Strasburg; and in Rhetia, in a stony place, som tyme of yeare used to be ouerflowen with the Rhene."

Gerard notices that it grows in Germany, Spain, Italy, and in Greece, and he tells us that both species of this plant grew in his garden in 1596.

Later botanists mention it as a native plant, because Mr. Giddy and W. G. Mason, Esq., found it growing on St. Michael's Mount, Cornwall, in the year 1794, as also near Hurst Castle, Hants; and Dr. Goodenough saw it near Hastings, in Sussex; but this is by no means satisfactorily proving it to be indigenous to our soil, as in all probability it sprang from cultivation in the two latter places, and from some accidental circumstance on the former spot, for it is of so easy propagation that the least sprig of it will often take root when thrown on the earth, and its not maturing its seed in this country is a sufficient proof of its foreign origin.

The Tamarisk has been frequently celebrated in the verses of the ancient poets. Homer mentions it as the tree against which Achilles laid his spear, before he plunged into the Xanthus, to pursue the routed Trojans. It is introduced in the Pastorals of Theocritus, and Virgil has noticed it several times in his Eclogues. Its name may also be found in several passages of the poems of Ovid.

The Romans considered it an accursed plant, and frequently speak of it as the unhappy Tamarisk, as it was used for wreaths to put on the heads of criminals. But as a remedy for diseases of the spleen it was considered of such efficacy, that drinking-cups were made out of this wood for those that laboured under this complaint, and the physicians ordered their patients to eat out of dishes formed from Tamarisk wood.

The magicians used it to impose upon the credulous by their pretended magical powers, and they ascribe qualities to this plant too much against common reason and decency to mention. Pliny mentions its use for besoms amongst the Romans.

It is found abundantly on the mountains of Dauria and Caucasus, in the Russian empire, and the Russians and Tartars use a decoction of the twigs in the gout and rheumatism, and contusions of the limbs, as a fomentation; they also drink it in case of internal injury. They make handles for whips, etc., of the wood.

Dr. Smith remarked this plant in great plenty in Italy about Sinigaglia, and all along the hedges near the sea, where the sheep preferred it to every other food, never touching any other vegetable while that remained. It grows plentifully also on the coast in Algiers, as well as in Japan. In some places it grows to a tree of middle size, but in England it remains as a shrub, seldom exceeding three yards in height.

The Tamarisk thrives in bleak situations by the sea-side, where most other trees and shrubs are cut off by the blast, for the branches of this plant are so pliable, that they bend without resisting the slightest gale, thus reminding us of the fable of the reed and the oak, or the lines of Hurdis:—

> "And so the storm,
> That makes the high elm couch, and rends the oak,
> The humble lily spares. A thousand blows,
> That shake the lofty monarch on his throne,
> We lesser folks feel not. Keen are the pains
> Advancement often brings. To be secure,
> Be humble; to be happy, be content."

We have few shrubs more graceful than the Tamarisk, its slender branches being covered with a chestnut-coloured bark, and garnished with very narrow leaves, lying over each other like the scales of fish, and of a fine bright green colour. This plant is in appearance between the cypress and the common heath. Its flowers appear in July, and are produced in taper spikes, at the ends of the branches; they are very small, and set close all round the spike, of a lilac colour, with red anthers. These are succeeded by oblong, acute-pointed, three-cornered capsules, filled with small downy seeds.

When planted in the shrubbery, the Tamarisk should mix with plants of broad and fixed foliage, as the laurel or holly. It is also calculated to cover the sides of hills, where it is desirable not to take off the view by taller trees; but its principal advantage over most other shrubs is in marine gardens, where it soon acquires sufficient height to protect rose-bushes and other low flowering shrubs. The Tamarisk is a deciduous tree, although when in foliage it has all the character and appearance of an evergreen shrub.

NOTES ON NEW AND SELECT PLANTS.

62. GONOCALYX PULCHER. It belongs to the Natural Order *Vacciniæ* (Bilberry). It is a charming bushy shrub, almost covered with its neat, tree Box-like foliage. The young shoots as well as the young leaves are of a beautiful rosy purple colour; the full-grown leaves are of a rich green. The flowers are produced in long spikes, which terminate in a coronet head of six to eight blossoms. Each

flower is tube-shaped, three quarters of an inch long, of a bright red colour tipped with white, similar to those of *Epacris grandiflora*. The plant is almost covered with its flowers. It is a charming greenhouse plant, and it appears likely to grow out-doors in warm situations. M. Linden has plants for sale.

63. CUPHEA EMINENS. In our last year's volume we noticed this very charming species. It is so valuable an acquisition that we again recommend it to our readers. It is a half-shrubby plant, branching freely, and blooming in vast profusion. The flowers are produced in long, branchy, terminal spikes. We have a spike now before us, which is eight inches long, and has sixty flowers upon it. Each blossom, tube-shaped, is an inch and a half long, a brilliant red, with a quarter of an inch tip, of a rich orange-yellow; the leaves are much like those of a narrow Peach leaf. It is highly ornamental for the greenhouse, growing about eighteen inches high, and blooms all the year, by providing a succession of plants. It appears likely, too, to be one of the loveliest bedding plants. M. Linden has plants of it.

64. DENDROBIUM BIGIBBUM, (*Double spurred*). Nat. Ord. *Orchideæ*. Discovered by Dr. Thomsoso, on Mount Adolphus, Torres Straits, on the north-east coast of New Holland. The slender pseudo-bulbous stems, rise to about nine inches high, and from these older stems the flowering shoots arise, which are about as long as the stem, each bearing from two to twelve-flowered. Each blossom has large petals, nearly round, of a deep rich lilac colour, and the *lip* a deeper colour, with the disc having a large elevated white crest. Each flower is about an inch and a half across; very pretty. Mr. C. Loddiges, of Hackney, possesses plants of it. (*Fig. in Bot. Mag.* 4898.)

65. CYPRIPEDIUM PURPURATUM (*Purple-stained Lady's Slipper*). Nat. Ord. *Orchideæ*. It is a native of the Malayan Archipelago. The leaves are (longest) from four to five inches long, deep green, beautifully mottled with almost *black* spots. The flowers (each) are about four inches across; *sepals*, spreading, two *upper ones* very large white, richly striped with purple; *petals*, large, spreading, a brownish-purple, streaked at the base and spotted with deeper purple; *labellum* (slipper) large, helmet-shaped, greenish-purple, with darker veins. The flower-stems rise about ten inches high, each crowned with one of its beautiful and highly interesting flowers. The plants flourish in the *moist temperature* of a stove, or hotbed frame, pit, etc. It begins (usually) to bloom in November, and continues through the winter. (*Fig. in Bot. Mag.* 4901.)

66. BANKSIA VICTORIA. Nat. Ord. *Proteaceæ*.—Mr. Drummond sent seeds of this very fine *Banksia* from the Swan River Settlement. He justly observed, "it is a most noble species, very near like *B. speciosa*, but easily distinguished from it by the segments of the leaves being larger, flat, not white underneath, nor scrobiculate above;" and Mr. Drummond honours it with the name of our gracious Queen. It

forms a good-sized handsome shrub. The heads of flowers are globe-shaped, beautfully arranged in *spiral lines*, yellow tinged with red. (*Fig. in Bot. Mag.*, 4906.)

67. CATTLEYA MAXIMA.—A native of Columbia and Guayaquil. It approaches near to *C. Mossiæ* and *labiata*. It is a very beautiful flowering plant; each blossom is about six inches across, being produced in panicles of six or seven in each. Sepals and petals of a pale rose colour. *Labellum* large, tube white, and in the disc or centre is an orange-coloured streak, and from a deep rose-coloured line bordering that, a number of branching lines of the same colour diverge towards the margin. It has recently bloomed in the collection of Orchids belonging to W. G. Farmer, Esq., of Nonsuch Park, Surrey. (*Fig. in Bot. Mag.*, 4902.)

68. ENCEPHALARTUS CAFFER (*The Caffer-bread*). Syn. *Cycus Caffra.*—It is the *Bread-tree* of the Caffers; and the substance called *Caffer-bread*, Thunberg tells us, is "the medulla or pith (in other words, the cabbage, or young unformed leaves, while yet within the substance of the top of the trunk), from which the Hottentots contrive to prepare their bread. For this purpose, after scooping out the pith, they bury it in the earth, and leave it there for the space of two months to rot, after which they knead it and make it into a cake, which, in their usually slovenly and filthy manner, they slightly bake in the embers. I observed that the tree stood in dry and sterile places, between stones, and grew slowly. The seeds are also roasted and eaten. Sir W. J. Hooker says, "The individual plant from which, our drawing was taken exhibits a *leafless* trunk (it had been blackened by the fires of the natives), six feet long, erect, cylindrical, and its girth nearly four feet. Forming a beautiful crown on the scaly summit, arise the *leaves*, thirty or forty or more, spreading in all directions, three to three feet six inches long, leathery, pinnated for the whole length; each *pinna* about six inches long, making the leaf a foot broad. It has a neat and interesting appearance. (*Fig. in Bot. Mag.*, 4903.)

69. LÆLIA ACUMINATA. Nat. Ord. *Orchideæ.*—It is a native of Guatemala, from whence it was sent to the Horticultural Society by Mr. Hartweg, with the name of *Flor de Jesus*, so called on account of its beauty by the natives. It was discovered, at a place called Retatulen, growing on the trunk of the Calabash-tree. It is a rather small plant, each leaf being about four inches long and one broad. The flower-scapes rise to about ten inches high, and each bears four flowers, which are spreading, flat, pure white, with a stain of yellow in the disc, which at the base is a deep purple; each blossom is about two inches across. (*Fig. in Bot. Mag.*, 4905.)

70. RHODODENDRON MOULMAINENSE.—Discovered in Moulmain, on the Gerai Mountains, at an elevation of 5000 feet, by Mr. Thomas Lobb, who sent seeds to Messrs. Veitch, in whose establishment plants have bloomed in the greenhouse. It forms a neat shrub, having reddish branches. Leaves mostly spreading, about six together

close below the terminal head of flowers; each leaf about four to five inches long and two broad. The flowers form an umbel, containing from ten to twelve blossoms, pure white, tinged with yellow on the upper side within, of a funnel-bell shape; each blossom about two inches across. (*Fig. in Bot. Mag.* 4904.)

71. WATSONIA IRIDIFOLIA, var. *fulgens*. Nat. Ord. *Irideæ*.—It is akin to the *Gladiolus*, *Ixia*, etc., and is a charming and very ornamental flowering hybrid. The flowers are produced in long erect spikes, of a brilliant orange-scarlet colour. Each blossom is about three inches long, the tube being two, and the six end lobes (face of flower) are an inch long, making the front two inches across. It blooms profusely from July to the end of summer. It merits a place in every flower garden or greenhouse. (*Fig. in M. Van Houtte's Flor. des Serres*, 1077.)

72. EXACUM MACRANTHUM. Nat. Ord. *Gentianeæ*.—It was discovered in 1840 by Mrs. General Walker, on the mountains in Ceylon. It was introduced by Mr. Thwaites, in 1852, to the Royal Gardens at Kew, and the Botanic Garden in Dublin. The flowers very much resemble those of a *Solanum*, each blossom being about two inches across, of a rich deep blue colour with yellow anthers, that make a pretty contrast. The leaves are oval-shaped, about three inches long. It blooms profusely, the flowers being produced in terminal, branching, panicled heads. It is very handsome, and merits a place in every collection. It flourishes when treated similarly to the *Lisianthus Russellianus*. (*Fig. in Flor. des Serres*, 1078.)

73. SALVIA PORPHYRANTHA. Nat. Ord. *Labiatæ*. Mr. Bentham, in 1848, enumerated 400 species of *Salvias*, which are recorded in the *Prodromus* of Decandolle, and amongst such a multitude, the present *dwarfish* species will rank with the *neatest* and *prettiest*. It is an herbaceous plant, the upper portion, being soft stemmed, dies down. The leaves are heart-shaped, about an inch long, and the same across. It is a most abundant bloomer, the numerous flowers being produced in spikes of six to eight inches long; each tube-shaped blossom is an inch long. The calyx is a purple colour, the corolla a rich scarlet-red, and being produced in profusion it is very ornamental. In the greenhouse it begins to bloom in February, and continues through the summer. It is, too, an admirable dwarf plant for bedding purposes. (*Fig. in M. Van Houtte's Flor. des Serres*, 1080, who has plants of it.)

74. WHITLAVIA GRANDIFLORA.—Amongst the new *hardy annual* flowers of recent introduction, this ranks with the prettiest. It is a native of California, where it was discovered by Dr. Coulter, 1845. Subsequently (in 1854) Mr. Thomas Lobb discovered it, and sent seeds to Messrs. Veitch. Seeds may now be procured of the principal seedsmen. It grows from nine to eighteen inches high, branching freely, and blooming profusely, if not in a *very rich* soil, as it then produces too much foliage. The flowers are *bell-shaped*, of the richest gentian-like blue colour, with a tinge of rose inside; each blossom is an

inch long, and an inch and a half across the mouth. It merits a place in every flower garden. (*Fig. in Flor. des Serres*, 1085.)

75. Rhododendron Etoile de Villiers.—This most beautiful variety has been obtained between *R. ponticum* and *R. Catawbiense*, in the nursery establishment of Messrs. Lemichez, of Neuilly, in France. The habit is more that of *Catawbiense* than *ponticum*. The flowers are produced in *large heads;* each blossom two and a half inches across; petals of thick substance, of regular broad outline. The ground is white, with one-third of it (next the margin) of a very lively cherry-rose colour. The upper segment is numerously and handsomely ornamented with golden spots. The anthers are a *violet* colour, contrasting prettily with the rose and white. It highly merits a place in every collection of evergreen shrubs. It is perfectly hardy. Plants may be had of Messrs. Lemichez, or probably M. Van Houtte, through the medium of any of the principal nurserymen in England. (*Fig. in Flor. des Serres*, 1084.)

76. Amaryllis Solandræfolia.—It is a native of South America; a hothouse plant of medium stature. The flowers are large; each blossom about nine inches long, and four across the front, of a greenish-yellow and white, with narrow stripes of red; very neat. There are several varieties of *A. Solandræflora:*—1. The flowers are white and green. 2. White and green, striped with purple. 3. Limb of blossom white and green, the tube purple. 4. The tube purple, the limb white and green, tinged with pale carmine. (*Fig. of the species in Flor. des Serres*, 1081.)

77. Pharbitis hispida (the *Convolvulus major* of our gardens). There are several new varieties of this very charming climber. M. Van Houtte has figured three handsome plants in the *Flor. des Serres*, viz.:—1. *Flore albo cœruleo-striato.* It has a white ground, with numerous stripes of blue and scarlet. 2. *Flore Kermesino.* Tube white, and the other portion (limb) a beautiful rosy scarlet. 3. *Flore violaceo.* Tube white, and the limb violet tinged with crimson, and five stripes of rosy red. Each variety is handsome. M. Van Houtte offers seeds of them, which may be had by post. (*Fig. in Flor. des Serres*, 1079.)

INSTRUCTIONS FOR JUVENILE GARDENERS.

BY A CLERGYMAN.

After your piece of ground has been cleared, dug, and raked smoothly, it must be neatly chopped round with the back of the spade, properly guided by a garden line, fixed even and tight, just above the level of the ground. This may be made of whipcord, fastened at each end by a prong of wood, large enough to keep it steady. When this is done, you may consider what the border is to consist of. Some prefer, as a garden border, what the agriculturists call a dead fence; and this may be made of bent osiers, or other flexible sticks, put round your ground in little arches; or it may be framed; or stones, or bits of tile, or wood, placed regularly. Others like better what is called a live fence; and this may be made of Daisies, Thrift, Stonecrop, turfs of Grass, or Box. I own that I much prefer a union of both a live and dead border. A pretty edging may be made with large white sand stones, which are found on the sea-beach, and may be easily collected by those who live near the coast. In place of these, the odd-shaped flint stones, that are to be found in almost every clay, gravel, or chalk pit, if placed round a little plot of ground with taste, form no unpleasing border. These must be half-way bedded in the earth, or they will not hold firm, and an edge of plants proper for the purpose must be placed just within the row of stones; the roots of the plants will bind the stones tight in the ground, and the whole looks well together.*

The Stonecrop is called, in some counties, Gold Dust, and in others, Wall-pepper; it is one of the numerous tribe of Sedums. Like the House-leek, it grows on the tops of walls, which it covers with its bright golden blossoms; the leaves are little thick three-cornered knobs, and have, if bitten, a very pungent, hot taste; it grows wild on many parts of the coast, and there are three varieties of the same plant—yellow, pink, and white. Its advantages as a border are, that it is very small, grows thick and close to the ground, is a long time in flower, and blossoms a considerable time. Like the rest of its tribe, it is apt to spread too much; this defect is easily remedied by the edge being now and then cut with a knife. Double Daisies form a charming border, and they are seldom out of flower at any time of the year.

Thrift is likewise useful for this purpose. One of the varieties is a very bright carmine-pink—this is rare; the common is lilac; some I have gathered in the salt marshes, of a pale flesh colour. Like the Stonecrop, this is a marine plant. If the seed-vessels of the Thrift are cut down when the blossoms fade, more flowers will spring, and your border look always neat and pleasing. Box is not so desirable, as it is a long time growing, and produces no flowers. Grass bordering is very well on a large scale, but it is difficult to be kept in order without the scythe.

Now we have provided the border, let us give some consideration to the interior. These little plots of ground are best suited to the cultivation of small and delicate plants; and care must be taken that what is put therein is not suffered to increase and spread too much, so as to draw all the nourishment from its neighbours. It should be one of the amusements of youthful cultivators, to remove carefully any superfluous suckers from the plants under their care, leaving only two or three stems, which will be far more vigorous and beautiful, than if the plant is left to throw out eight or nine. There is, beside, more room for variety. It is likewise desirable to know what plants grow and blossom freely in the shade; as some change their colours, become sickly, and actually die, if planted under a tree, or beneath a north wall.

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* [Short stakes driven into the ground, at a few inches apart, to which plain or striped leaved Ivy, etc., is trained, make a very neat fence for beds of Hollyhocks, Dahlias, etc.; or Larch, Yew, Holly, Arbor Vitæ, etc., kept clipped a foot high, answer well.—EDITOR.]

Polyanthuses, Violets, Primroses, double and single Cowslips, and Snowdrops, not only flourish in the shade, but prefer it. So do the whole tribe of the Narcissus, the beautiful Lily of the Valley, Grape Hyacinths, Blue-bells, and Cyclamens. This last is well worthy of attention; it is a scarce but a remarkably beautiful flower, and singular in all its habits. I do not mean the large Persian Cyclamen, that is commonly seen in pots, in the spring of the year—a costly and cherished inhabitant of the greenhouse—but a small English species, that grows wild in many parts of England. It has a large, oblong root, as large as the largest potato, and when cut it has the appearance of the flesh of that root. The Cyclamen has no footstalk, but every flower and leaf ends in a radical filament, by which it is fastened to the large fleshy bulb that is its principal root. The leaves are perhaps more beautifully marked than any other vegetable production; they are irregularly heart-shaped, large, of a dark green, figured all over with a variety of the most beautiful patterns in light green, black, and white; the reverse of the leaf is of a bright carmine colour, veined and shaded with light green. The flowers are delicate, and worthy of the closest examination. Some are white, shaded with lilac at the bottom; and another sort is bright lilac, shaded with crimson in the same manner. They are shaped like little mitres, and grow very close together, though their stalks are not united. The flowers spring up after the old leaves die away, and form a most beautiful group in the autumn. Their favourite residence is at the roots of an old tree. The seeds are likewise worthy of remark. They, of course, take the place of the flower, and the seed-vessel grows to the size of a small nut, of a dusky red-brown; but, what is perhaps the most curious of the habits of this singular plant, when the seed is ripe, the stalk which supported the flower, and was before very straight, now begins to curl itself round like a corkscrew, till it gets close to the earth, and even deposits the ripe seed therein, as if for the purpose of taking root!

Among small shrubs, the dwarf Almond, all the species of the Mezereon, the Victory Laurel, and the small kind of the Laurustinus, will flourish in the shade; but, above all, the Chinese or Monthly Rose will produce its long succession of beautiful buds and blossoms better in a cold shady place than in the full blaze of sunshine. It is desirable to know that this charming flower grows very readily from cuttings, if the slips are planted in the months of June, July, or August. All kinds of the deciduous or summer Roses are propagated by parting the roots; but this, which is nearly evergreen, is easily multiplied by pieces cut from the bush [also by budding—Ed.], as it never throws up suckers. Whenever the wood of a Monthly Rose plant looks rough, scraggy, and unsightly, it is a good plan to cut it down level with the ground or pot, then divide the branches you have cut off into many slips, leaving on each two or three joints. Place these in very moist loose earth, having one joint out of the ground, and one or two beneath it; because leaves will spring from that part of the slip that is exposed to the air, and roots from the others. The shade of a wall is the best situation for these. The slips must be well watered, and in a few weeks new leaves will appear (a sure sign that the plants have taken root), and the slip will often bear buds and flowers before the end of autumn; these, however, should be nipped off, as they weaken the young plants. They will stand the winter very well, and be fine little Rose trees in the spring, fit to pot; thus, from the refuse of an old plant, a great number of young Roses may be reared. This operation, too, is attended by the greatest benefit to the plant that is cut down, as it will throw out many strong shoots, of a beautiful deep red, which will thrive with astonishing rapidity, and produce larger and fairer Roses than any that grow from old wood. The Scarlet Monthly Rose, of every variety, both double and single, may be reared in the same manner.

The best Anemones are rather costly flowers, whose roots always bear a good price. It is a common but, as I have often proved, a very mistaken notion, that if this plant is reared from seed, it requires four or five years of constant attention before the seedlings blossom. If the seeds, which appear like tufts of cotton mixed with dark specks, be gathered and sown in a box full of light fine earth directly they are ripe, they will soon come up, with two pointed, long, slender leaves, and before the autumn is over, these will be succeeded by the leaves usual to the perfect plant, which are beautifully cut in many divisions—something like parsley-leaves, but finer. The whole plant then dies down for the winter; and the roots, if examined, have the appearance of small lumps of earth, and are very difficult to find; for this reason they are best sown in a box, as they are liable to be lost in the open ground. It is desirable to leave the box undisturbed—only let it be carefully weeded. The young Anemones will make their appearance in the spring, and seldom fail of blowing the succeeding autumn, when they are a year old. I have known some, when they liked the ground, even bloom the spring after they were sown. After they have blossomed, the plants will die down, and the roots must be carefully dug up, and if left undisturbed in the border, will increase very fast.

It only now remains to say a few words to those who love plants, and are not so happy as to dwell in the country to enjoy them. All plants in London need just twice as much water as they do in the country; because the acrid nature of the smoky atmosphere naturally dries up their moisture. The leaves should likewise be sponged, when they are covered with dust or blacks. Geraniums and Monthly Roses are the plants most desirable for a London veranda, because if watered every day, and placed level with the light, they produce a constant succession of leaves and flowers. Hydrangeas, both the pink and the curious blue variety, are flowers often seen in the metropolis: if properly treated, they retain their beauty many weeks, but they are generally starved for want of water. The Hydrangea is a native of a marsh, and will grow luxuriantly half immersed in water, therefore its pot ought to be plunged in a large pan constantly kept full of water; the plant will then thrive and flourish, even in London. Pinks, Carnations, and Stocks, though favourite flowers in the windows of the metropolis, it must be remembered, yield no second produce of blossoms; they bloom but once in the year, and their beauty lasts only a short time. It must be observed as a constant rule, both in town and country, to remove instantly all faded blossoms, as well as dead leaves; the plant is then kept in health, and is not exhausted by bearing seeds.

And now, wishing my young friends flourishing gardens, and a profusion of beautiful blossoms during the present year, I bid them farewell.

MISCELLANEOUS.

On the New Carnations and Picotees of 1855, by R. R. O.—The past season has, in some localities, been comparatively unfavourable to the perfect development of the Carnation and Picotee bloom, and therefore the experience of an individual cultivator may scarcely warrant censure on several new flowers, which have been anything but satisfactory, until they have undergone another year's probation, and possibly under more favourable auspices. I will therefore assume the more pleasing duty of recommending a few that are *really good*, and worthy a place in the most choice selections.

The first in order stands Hope (Puxley), C.B., which, though not A 1 of its class, is a beautiful, bright, useful show flower. Exit (May), S.F., is a flower of great refinement, but of bad constitution, being shy of increase, and most difficult to winter, even under judicious care. Christopher Sly (May), S.F., is a very fine flower, and one, I am persuaded, will wear Exit out, being of fine habit of growth, rich colour of peculiar crimson shade, superb petal, and good form. King John (May), R.F., can easily be beaten in its class, yet it is a fine, useful show flower, as grown in the south. For the midland counties it is three weeks too late in its blooming. It attains immense size, yet is rather *full*, to my fancy. In Picotees, there have been a few superb additions; and first on my list is Mrs. Bayley (Dodwell), H.P.E.; assuredly, up to the present time, A 1 of her class. Finis (May), Mrs. Keynes (Norman), and Amy Robsart (Dodwell), light purple edge; it will be difficult to surpass in excellence, or to decide which is the best of the three, though all are perfectly distinct. Mrs. Hoyle (Hoyle), H.R.E., is an extra fine variety, but unfortunately too late for the midland counties. In light reds, we have three gems in Rosetta (Turner), Mrs. Kelke (Turner), and Miss Wake (Haddon); each and all are first-class flowers. Lady Grenville (Turner) is a heavy rose, of a pleasing, soft colour. I have seen it very fine. With me the petal inclined to reflex, and the marking was more feathered than solid. Alice (Hoyle), heavy rose, is a gem of unsurpassed excellence; pre-eminently distinct from Venus (Headly). The foregoing close my list for approbation, and, for the benefit of beginners (of whom I trust there are many), I subjoin a list of thirty-six *accessible* varieties:—

Carnations. S.B.s—Admiral Curzon (Easom), *Omar Pacha (Puxley), Mr. Ainsworth (Holland); C.B.s—Black Diamond (Haines), Hope (Puxley), Jenny Lind (Puxley); P.P.B.s—Sarah Payne (Ward), *Morgan May (Turner), Falconbridge (May); P.F.s—Premier (Millwood), Julia (Nicklin), Mayor of Oldham (Hepworth); S.F.s —Christopher Sly (May), Queen Victoria (Simpson), Tybalt (May); R.F.s—Uncle Tom (Bramma), Poor Tom (May), Lovely Ann (Ely).

Picotees. H.P.E.—Mrs. Bayley (Dodwell), Alfred (Dodwell), Countess (Fellowes); L.P.E.—Finis (May), Mrs. Keynes (Norman), Amy Robsart (Dodwell); H.R.E.—*Sultana (Turner), *Dr. Pitman (Turner), Rufus (Merryweather); L.R.E.—Rosetta (Turner), Mrs. Kelke (Turner), Mary (Dodwell); H.Ro.E.—*Mrs. Drake (Turner), Helen (May), Alice (Hoyles); L.Ro.E.—*Bertha (Marris), *Florence Nightingale (Dodwell), Mrs. Barnard (Barnard). Those marked with an asterisk are new this autumn.—R. R. O., Nov., 1855.

Another correspondent writes,—May's Galatea must not be lost sight of. With me it has been a worthy rival of Sarah Payne. John o'Gaunt has been as treacherous as he was last year. Exit has been extra-extra; full without confusion, a superb scarlet, and one of the best whites I ever saw. Prince Albert was very good; as also was Mrs. Hoyle. Mrs. Headly is a regular burster. Hoyle's Alice will be a beat upon Venus, but is such a flower to burst. I lost every pod on two plants, although I must plead guilty to a little neglect in watching. Black Diamond has bloomed most excellently, and Captain Franklin has been marked admirably. King John has flowered with me in fine style, and is a decided acquisition. Amy Robsart was very fine, and attracted my particular attention. Harry Bertram, although very full, was good in the later blooms. The first blooms were barred in the extreme. Annot Lyle was rather out of character. Of Kaye's Excelsior I had a magnificent flower, failing only in the white; rather a large failing to be sure. Kaye's Comet, S.F., appears a beautifully marking flower, but is terribly "leggy." I firmly believe he must have raised all of that batch from Hamlet, they are all so much alike in their growth. What is your opinion of Young Milton, C.B.? Mine bloomed rather heavy in colour, but I think I grew it too richly, as it was backward, and I pushed it too much. This may account for the indistinctness in its colour.—(*Midland Florist.*)

Horticultural Society's Meeting, Regent Street, Feb. 26.—Some observations on grafting were made on this occasion by the Vice-Secretary, Dr. Lindley. He began by stating that grafting often occurs naturally, as is instanced by branches, fruits, and even petals of flowers in close contact, and under certain conditions growing together, and went on to show that such accidents had doubtless led to effecting the same thing artificially. It is in reality, he said, the property of all living vegetable tissues to form permanent adhesions under certain circumstances. *Very young* or nascent tissue may be made to grow together with facility, as is exemplified in practice by what is called herbaceous grafting. Ripe tissues were next alluded to; but even in the case of these it was shown that a union could only be effected by bringing into contact nascent matter, which practically consists in fitting the line of the cambium in the stock neatly to that of the scion, or, in other words, fitting the two together exactly. If this manipulation was not effected skilfully, the union, it was stated, would be imperfect, as would also be the case if the stock was broader than the scion. It was mentioned that some believe that the scion sends down wood into the stock, but that this theory was attended by many difficulties. The point had been illustrated by Dr. Maclean, of Colchester, who grafted a yellow Beet on a red one; when the two were split down the middle after they had been united, it was found that the yellow Beet still remained yellow, and that the red kind on which it was grafted still remained red. In this case there was no blending together of the tissues; the two varieties kept quite distinct. Cellular tissue, it was stated, would not unite with wood, nor wood with wood; with unskilful operators and the employment of unsuitable stocks, bad joints were therefore of frequent occurrence. Although the scion was not of the same nature as the stock, there might be adhesion; but the line of separation between the two would always remain distinct, and in bad cases it not unfrequently happened that the two parted company across the line of union. Nevertheless, when stock and scion were alike in kind and constitution, as when a Pear is grafted on a Pear, and the workmanship well performed, all traces of their having been grafted disappeared. It was stated that, under proper conditions, adhesions might therefore be permanent and perfect, and that grafting might result in as complete a plant as any seedling. Of this various proofs were produced. It was shown, however, that adhesions might be temporary, either from bad workmanship or from want of consanguinity. The ancients, it was stated, were of opinion that Apples would grow on Plane trees, and Beech-mast on Chestnuts; but it was explained that this was a mistake, and that no permanent union could take place unless stock and scion had the same constitution. Sometimes durable unions might be effected, as was instanced in the case of Pears on Quinces, and Peaches on Plums; but they were not permanent. Evergreen trees, it was stated, did not succeed on deciduous ones, in illustration of which, an example of *Quercus Turneri* worked on the common Oak was produced; the evergreen in this case had grown for thirteen or fourteen years, but was now dead, while the stock was alive and throwing out suckers. Similar cases, with nearly as bad results, were also before the meeting. But what, it was asked, is "the same constitution?" Peaches take on Plums, although constitutionally unlike; but what is very curious, French Peaches, which take freely on the Pear Plum, dislike the Mussel Plum; and other examples of the same kind were brought forward. It was stated to be far easier to say what was not the same in constitution. The Cedar of Lebanon, for instance, would not long agree with a Larch, nor the Medlar with the Whitethorn, or the purple Cytisus with the Laburnum. In general, the following conclusions might be drawn:—1. A scion will always form a perfect and permanent union with its stock if both are from the same individual. 2. A scion will generally form a perfect and permanent union with its stock if one is a mere variety of the other. 3. A durable, but not permanent union may be effected when one species of a genus is worked on another species. 4. No union, either durable or permanent, can be expected when stock and scion are widely different. 5. Bad workmanship will render any kind of grafting perishable. Grafted plants, then, are not necessarily worse than seedlings. A letter from a Fellow of the Society was read, to show that in the case of Rhododendrons, at least, they were. Examples in the shape of grafted Rhododendrons, apparently proving the contrary, were, however, produced by Messrs. Standish and Noble. It was, nevertheless, universally admitted, that except the stock and scion were identical in their natures, plants thus increased were not so good as seedlings. Both reason and experience therefore showed that everything depended on the consanguinity of the stock and scion, and that what is wanted is not to have new methods of grafting invented, but to know more about consanguinity. Mr. Glendinning objected to the statement that evergreen Oaks did not live long on deciduous ones, and pointed to the fact that in Devonshire the Lucombe Oak worked on *Quercus Cerris* had attained the size and age of timber trees. The room was plentifully supplied with specimens of grafted plants from Messrs. Standish and Noble, of Bagshot; Veitch and Son, of Chelsea and Exeter; Masters, of Canterbury; Osborne, of Fulham; Rivers, of Sawbridgeworth, and from the garden of the Society.

QUESTIONS, ANSWERS, AND REMARKS.

On destroying Woodlice.—How am I to destroy, most effectually and readily woodlice, with which I am pestered in my greenhouse and frames to an enormous gree?—*Alpha.* [Cold boiled potatoes put into small garden pots, and covered wit little loose moss, and placed where most likely to be found by the insects, is the method we have tried. The insects are fond of the potato, and remain concealed under the moss. The pots require examining early in the morning, and the insects destroyed; when requisite, replace with fresh potatoes. We have used ingredients, poisonous, which, mixed up with other things, effectually kill the insects partaking of it; but as danger attends such a mode of destruction, we do not recommend its adoption.—*Editor.*]

On preventing Bulbs throwing out Shoots during a Voyage.—Will you inform me, through any of your correspondents, in what way roots, such as Dahlias or bulbs, may be conveyed to the Antipodes, a four months' voyage, so that they may not throw out any shoots in the interim? I suppose the voyage to commence about February or March.—S.

On a List of Flowering Shrubs and Ornamental Trees.—You would much oblige a Subscriber and Old Correspondent, by obtaining, through the medium of your Magazine, the following information:—A list of flowering shrubs and ornamental trees best calculated "to face up" a shrubbery, with some idea of their price, where a good selection can be obtained, and particularising such as thrive best on a chalky soil.

On a List of Stove and Greenhouse Plants, etc.—A Subscriber wishes also that you would mention (when better things are not abundant) the names of a few stove and greenhouse plants that, like the Thunbergia, do best in bog (not peat) soil, and whether you have tried the experiment of mixing old tan with the mould given to the *Hoya carnosa*, and with what success.—*Alpha.*

On Stove Aquatic Plants.—A Subscriber would be obliged if some additional remarks (for the subject has been treated of before, but not much at length) were given on the cultivation of, and soil for, stove aquatics.

On Tulips.—A Constant Reader of the *Cabinet* wishes to ask some of the experienced Tulip-fanciers whether all the flowers broke from the same breeders take the same name with the first that was broken, or are they merely reckoned as different strains of the same flower. Is it the case that they are sometimes altogether different flowers? Having this season planted some celebrated named breeders, I am anxious to be informed as to this point; perhaps Mr. Groom would have the kindness to set me right in this respect, which would be esteemed a great favour by—*An Enthusiastic Tulip-grower.*

Combretum purpureum and Ardisias. I shall take it as a favour if the Editor, or some correspondent, will inform me of the best mode of blooming the *Combretum purpureum*. The plant I have grows very strong, but never shows any appearance of bloom: it is growing in a stove at present. I am also desirous of some information on the *Ardisia*. I have seen less plants than mine loaded with fruit, but mine never has more than one or two fruit at once. The plant grows very well, and appears in good health.—*Juvenis.*

On Evergreens, etc.—Will some reader hereof oblige me with the names of a dozen of the best sorts of dwarf evergreens—say from one to three or four feet high—fit to make a small shrubbery at the end of a narrow slip of garden ground in Pimlico, mentioning the proper time to transplant them, and where they are to be got best? also if there are any gardeners that pay exclusive attention to growing evergreens, as there are some that grow Tulips, Pinks, Carnations, and Pansies?—*Henry Liddell.*

Culture of Hyacinthus plumosus and Ixias in Pots.—I should be obliged if some correspondent would favour me, in an early number of the *Cabinet*, with a successful mode of treating the *Hyacinthus plumosus* and the various Ixias, when grown in pots for the greenhouse.—*A Twelvemonth's Subscriber, Totnes.*

A Successful Method of Growing Indian Azaleas.—Louisa would be glad of some hints on the management of Indian Azaleas, so as to enable her to grow them as fine as the specimens seen at the Exhibitions of the London Horticultural Society.—*Hants, December* 12, 1855. [Turfy, sandy, peat soil, not sifted but chopped, which has been laid in a ridge for six months, and about a quarter of rich loam, also kept rough, is a compost they delight in, using a free drainage. Care must be taken not to over-pot them, and to let the ball be highest at the centre, and be raised so that the water does not lodge about the collar of the plant, or the plant will be very liable to canker off. They should be repotted just before they begin to push in spring; when growing frequently be syringed over head, and kept in a temperature from 50 to 60 degrees. Have a liberal allowance of air and light, taking care they are not placed in a cold current, as it often destroys plants so situated, especially in the early spring months. When done blooming, about the end of July, place them in the open air, where they will be sheltered, not under the drip of trees, but where they will have the full afternoon sun. Here they will require to be frequently syringed. At the end of September, having formed their blooming buds, they should be taken into the greenhouse, and be placed at the back part near to the glass. Some attention is required in forming a plant so as to have a nice leading stem, and to be clothed from the edge of the pot to the summit with a regular arrangement of blooming shoots. Occasional pinching off the points of the leaders or laterals will be necessary to effect the purpose, but with such attention any desired form is readily obtained. When required to bloom in winter or early in spring, it takes about five or six weeks from beginning to push till they are in bloom, and by regular introduction a constant succession from Christmas to July may be had.—*Editor.*]

A SELECTION OF CHOICE GREENHOUSE PLANTS.—Having just built a small greenhouse, I am desirous to make a collection of a few handsome plants, and have looked over your Magazine with that intent, but am unable to choose from so great a variety named, and am likewise ignorant whether they are easily to be procured, and at what price. Will you therefore be kind enough to give a list in one of your early numbers, with the price, and also of some handsome hardy perennials. By an early answer to the above queries you will much oblige—*A New Subscriber.*

ON GRASS SEEDS FOR A GRASS PLOT.—Having a grass-plot of half an acre in preparation, I am desirous of knowing what are the best kinds of grass seeds to sow upon it, and the proportions of each; an early answer will oblige.—*Tynemouth.* [In a former number of the *Cabinet* a list was given, to which we refer our correspondent. The following is an excellent assortment:—Poa nemoralis, 1 lb. Poa nemoralis sempervirens, 1 lb. Festuca duriuscula, 2 lbs. Festuca tenuifolius, 1½ lb. Poa trivialis, 1 lb. Lolium perenne tenue, 12 lbs. Trifolium repens, 4 lbs. Trifolium minus, 1 lb. Cynosurus cristatus, 2 lbs.—*Editor.*]

ON GROWING THE CAMELLIA IN HOUSE WINDOWS.—In a late number of the *Cabinet*, an Old Subscriber asks for information as to growing this beautiful plant in dwelling-room windows. Having for some time grown a number in my windows, which have done remarkably well, I feel happy to give him the information he requires. I should recommend him, as a beginner, to purchase his plants immediately, as the buds will now be well set; let him place them in those windows which have the best light, water them regularly, but take care not to make the soil over wet, as it would tend to cause the buds to fall off. Of course, they must be placed in such rooms as have constantly a fire through the winter months. After flowering, I move mine from the parlours to the kitchen window, previous to which I shift them into larger pots; by moving them in this way, I get the additional heat they need, during the season of growth and forming the flower-buds for the next season. I let them remain here as long as they are in a growing state, or until the buds are properly set; I then again place them in the parlours. During the time they are in the kitchen windows the leaves will collect the dust, which I recommend to be washed off twice a week with a sponge kept for the purpose; and in the summer months, at least once every week, take them into the garden and sprinkle well with a watering-pan. With respect to the sorts to be grown, I should say choose those which will make the best variety, as almost all sorts will grow equally well. I have a considerable number in my windows now, which have been treated in this way, and more healthy plants I never saw. The soil I use is composed of peat soil, mixed with white sand, sandy loam, and a little well-rotted manure. Should your correspondent require further information, I shall be happy to give it.—*Manchesterensis.*

CAMPANULA PYRAMIDALIS.—Seeing an inquiry in your *Cabinet* on the cultivation of *Campanula pyramidalis*, with a reply by Amicus, who advises *slips* to be taken off in the month of April, and having cultivated these plants for several years by a far different method, I therefore trouble you with a few remarks on that I pursue. As soon as the plants have done blooming, I immediately turn them out of their pots; the root I then break into as many pieces as I want plants; I then put five or six of the pieces into a 48-sized pot, which I about half fill with mould, then put in the pieces, and afterwards fill the pot with the mould. If I have the convenience of a frame or hand-light, after watering, I place it over them. In the spring (about March), I pot them singly, and so let them remain during the summer in any cool part of the garden, where they grow vigorously. In the following spring I pot them into 24-sized pots. When I have the convenience of a light in a frame, or spare room in a greenhouse, I place them there till they have done blooming. Last season I cut a white one up this way, and I have now thirty-six strong, healthy plants for bloom next summer. I beg to observe, that if some of the largest pieces of the roots are selected, and placed upon any slight heat, they will bloom finely the following spring, the plants making their appearance through the mould in two or three weeks; or they may be increased in the way I have been mentioning, entirely in the open air, and when strong enough for bloom, brought into the apartment of a house. I pot in any common garden soil that is light.—*Walworth.*

LILY OF THE VALLEY.—If Lady Cecil's garden happens to be located near London, in a confined situation, or if the soil of her garden is *very rich*, or *very dry*, she may despair of blooming this plant. The converse of these will, no doubt, have the desired effect.

COMPOSTS.—If H. S. procures good loam, very rotten horse or cow dung (quite mould), silver or white pit sand, and peat or heath mould, he will have all the ingredients necessary for composts for almost every plant that grows. The proportions must of course be adapted to the nature and necessities of each particular plant.—*Amicus.*

RAISING CARNATIONS FROM SEED.—Observing, in your *Cabinet*, that several of your correspondents solicit some information on raising Carnations from seed, I am induced, as a tolerably successful cultivator of that delightful flower, to offer a few remarks. Experience has proved to me the error of sowing seed from self colours, or those possessing bad properties, as, by repeated trials, I am satisfied that the only chance of obtaining superior flowers is to sow *your own* seed, produced from those acknowledged to be first-rate. The course I have adopted, and which I recommend, is, when the petals are dead, to pluck them out of the calyx, or cup containing the seed-vessel, leaving the two styles, or what are generally called the horns; by removing the former, the pods are kept dry, and more exposed to the sun and air; they should at all times be protected from rain, by placing over them the shades used at the time of blooming; and care should be taken that the vessels wherein the legs of your platform stand are constantly supplied with water, to prevent the approach of those nocturnal enemies—earwigs. When the seed vessels become hard, and present a brown appearance at the tip, they should be gathered, and in that state preserved, in a perfectly dry situation, until the following April or May, which is the period for sowing in pots or boxes filled with rich loam, taking care not to cover the seed more than a quarter of an inch; give them a slight watering before they are plunged into a hotbed of about sixty-five degrees; occasionally moisten the surface with soft water, of the same temperature as the air in the frame; and as soon as the plants appear, admit the air freely during the daytime, to prevent their being drawn up. When about three inches high, transplant into larger pots or boxes of rich turf-mould, five inches apart; place them in a southern aspect, at first protecting during the nights with matting, and applying moderate light watering in dry weather; but invariably avoid wetting the plants, as too much moisture frequently decays the hearts of the shoots, and prevents their blooming the second year. In about six weeks again transplant them, a foot asunder, into beds prepared of good sandy loam, mixed with rich garden-mould; keep the beds clear from weeds, and water copiously in the evenings during the summer. By adopting the above course, the plants will be found exceedingly strong towards October, and require little or no protection in the winter; but should any appear particularly weak and unhealthy, take them up, and after examining the roots, which is generally the seat of disease in plants, replant them in a different compost, and during the severe weather protect with pots raised about two inches upon pieces of tile. I have always found a long bed in the centre of a grass-plot, about three or four feet wide, so as to admit of two or three rows, by far the best situation for seedlings, being more easily protected, when necessary, by mats or hoops, and decidedly less liable to be injured by snails, etc. In the following April let the beds be well cleaned, and the surface carefully loosened, to receive a thin top-dressing of rotten manure, the application of which will be found materially to renovate the mould, as after so many months it necessarily becomes much impoverished. I am not, however, an advocate for planting seedlings in very rich compost, as it is much more practicable by cultivation to put colour into a flower, than to extract it. When the shoots are grown about a foot high, they should be supported by sticks; at this time they will also require to be frequently watered; and as they bloom, pull up all that come decidedly bad; the best, of course, should be piped or layered at the proper season. Some persons sow the latter end of May, allow the pots to remain in the open air, and prick the plants out at once into beds. The disadvantage of this system is obvious: for, in the first place, they do not come up so soon; and, secondly, when planted in beds at so tender an age, they are rendered more liable to be destroyed by worms and slugs. As regards impregnating Carnations, I am of opinion, with many others; that the bees and insect tribe execute that work much more effectually than can be performed by the hand.—*J. W. C.*

Luculia gratissima.—In a recent number, I observed a Lady Gardener asks for instructions relative to the successful treatment of this unrivalled autumn and winter flowering plant. Two years ago I planted a small plant in the border of a conservatory, into which abundance of air is usually admitted, and which is kept at a very low temperature; indeed, little artificial heat is employed beyond what will exclude frost, and the thermometer has frequently been as low as 36° Fahrenheit. The dimensions of it now are, height seven feet, diameter (measuring through the branches) five feet six inches; diameter of a cyme of flowers seven inches. The border in which it grows was excavated two feet deep, in the bottom of which is a drainage composed of brickbats and coarse rubble, six inches thick; immediately over this were put turfs of heath-mould, rough from the common, upon which again is placed the compost, consisting of one-third strong rich loam and two-thirds sandy heath-mould, coarsely broken and well blended, but on no account screened. I consider this drainage very important to *plants in general*, and absolutely indispensable for *Luculia*, the complete success of which will materially depend upon this being attended to. During the summer and early autumnal months water requires to be freely supplied, and the *under* surface of the leaves, as well as the whole plant, repeatedly washed with the fine rose of the syringe, because being subject to the attacks of red spider, which I need hardly observe will, if undisturbed for any length of time, greatly injure it. Occasionally some liquid manure was applied, but this requires caution, and must not be repeated too often, and not at all after the summer season. The general waterings must also be gradually diminished in September, and afterwards administered very sparingly, for the fine fibrous roots are easily injured by too much moisture. Under this easy management *Luculia* is a splendid plant, covered with large cymes of beautiful flesh-coloured fragrant flowers, which continue in perfection during the dull months of November, December, and January. Its foliage, too, is luxuriant, dark, and green, and contrasts admirably with the large, bold heads of flowers. Persons desirous of successfully cultivating this beautiful plant, should observe that it requires a much *cooler* treatment than it generally receives. When grown in a pot, it must not be excited by *high* temperature in the spring and early part of summer, it must *then* be kept in a greenhouse. At the end of May and early in June it should be turned out into the open ground in a *warm situation*, rather sheltered from the sun, and in September be taken up, repotted, and placed in a vinery or coolish plant-stove. It will then grow freely and form its heads of flowers, which will expand their beauties and diffuse their fragrance through the winter. It is a good plant to flourish, when in bloom, in a sitting-room. Whether grown in the hothouse or open air it requires some portion of shade. It is one of the finest winter plants in the country, and deserves a place in every conservatory or greenhouse.—*John Spencer.*

On Sowing Seeds.—All seeds, except annuals, from the plants which are natives of California and North America succeed best when sown in autumn, as soon as they are ripe, and those from Chili and Mexico when sown in spring. The seeds of the shrubs and trees of North India and Europe in autumn, and annuals and perennials in spring. In order to succeed in raising plants, sow in dry soil, and give no water till the seeds vegetate; seeds are often destroyed by giving water when just sown, especially with old ones, they immediately rot; better shade from sun than give water. Having had considerable practice in these matters, I give the result of the facts of a twenty years' practice as foreman in one of the first London nurseries.—*W., St. John's Wood Road.*

To Destroy Moss on Grass-plots.—(To A. B.) Pure gas-water, diluted by double the quantity of water, poured over a grass-plot injured by moss, effectually destroys it, and in no degree hurts the grass; or nitrate of soda spread over it, in the proportion of two stones to a rood of ground, is equally efficacious. To succeed the best, neither of them should be applied in *hot* weather, nor when there is *much* grass. —*A Constant Subscriber.*

HOYA CARNOSA.—If your correspondent, L. B., wishes to have a good-sized plant, without much trouble to himself, I can tell him a plan I have for years adopted. I have taken off a shoot a yard and a half to two yards long, planted it, in a small pot, in sand and moss, in which it has rooted immediately, and bloomed the same season. The moss must have a plentiful supply of water.—*W. Williams, Manchester.*

NOTES ON NEW AND SUPERB PINKS MADE LAST YEAR.—*Colchester Cardinal* (Norman).—Although below the average size, its properties are of that sterling and refined character that it may be fairly designated the "multum in parvo" of a beauteous tribe, and a variety no cultivator, assuredly, should be without. In colour it is a rich crimson, petal extra smooth, and lacing broad and well defined. *New Criterion* (Maclean).—A glance at this newly introduced and estimable flower will not be thrown away, if you delight in properties of the most exquisite and refined character; in fact, it is a star of the first magnitude. Combined with a large and nicely rounded petal, will be found the sweetest and most unique style of marking imaginable, whilst a happy contrast of colour, in a class where too much sameness prevails, is another recommendation. Its lacing is a rich rosy purple, assuming a deeper yet pleasing tint as the flower ages. It is indeed an acquisition, and if absent from any competing stand, a point of vantage will be thrown away. *James Hogg* (Bragg).—Mr. Bragg has here presented us with an extraordinarily fine specimen of the pink, one in which a real advance towards perfection may be observed. The petal is of superlative form, laced with a distinct and even band of a dark chocolate colour. In this gem may be found nearly every good property a flower can possess, and it is clearly one of those varieties which deserve a place in every collection. *Adonis* (Maclean).—This appears to be of delicate habit, and will require the highest skill of the cultivator to do it justice, although it has the advantage in size of petal. It forms an excellent counterpart in colour to *New Criterion.* I am inclined to think that the same pod of seed produced both sorts; and if I mistake not, some splendid seedlings will be produced by judiciously crossing this useful flower. *Brunette* (Maclean).—This variety lacks the excellent properties so conspicuously prominent in Dr. Maclean's seedlings. The lacing, although of a fine dark colour, is much too heavy, and its style of marking is irregular. It may possibly be brought out in showable condition; but even then the primary points of attraction will be wanting, and it must materially improve before I can consider it entitled to a place among the select, a position I unhesitatingly accord to the others herein described. *Richard Andrews* (Turner).—This variety possesses some fine attractive points, and is well worth inquiring after; the lacing is bold and distinct, and the ground-colour of a lively hue. It is altogether a very pretty sort. *Mr. Hobbs* (Looker).—This variety must not be lost sight of; it possesses a good petal, with an attractive style of lacing, which is evenly laid on, and is of a good dense colour. It will bear scrutiny. *Richard Smith* (Looker).—This pink ought to be more generally cultivated than it is at present; but probably its propensity to burst deters some from growing it. I would, however, find room for half a dozen plants of this variety, rather than forego the chance of obtaining a perfect specimen. When well bloomed it is a clipper. Its habit of growth is very straggling. *Field-Marshal* (Hales).—A majestic flower, certainly, growing to a large size, and lacing very steadily. It has a broad band of lively rosy purple lacing, and is also an excellent grower. Though a full-podded variety, it may be easily bloomed, and flowered with me very fine last season. Of the new sorts coming out, if report speaks true, *Mrs. Norman* (Norman), *Mrs. Stevens* (Looker), and *Peter Young* should be added to all collections; and to the raisers of seedlings, I would direct special attention to *Great Criterion,* from the circumstance of it being rather a thin flower. Amongst the older varieties, *Sir Joseph Paxton* (Bragg), with its finely formed petal and showy red lace, and *Purple Perfection,* which, if there is anything in a name, is entitled to its full share of notice, are two flowers of the right stamp, and should be sought after. *Perfection* (Turner), is a chaste and refined sort; *Harry,* a large flower, but rather inclined to coarseness; and *Sarah,* when well grown (and it must be so grown to be seen in perfection), is a sweet variety. To these I must add his *Optima,* a well-known and inviting sort, though somewhat difficult to manage. These must not be lost sight of. *Narborough Buck* (Maclean), a noble flower, but hard to keep from flushing, and his *Criterion*, known to almost every grower of the Pink, are sure to be found in general cultivation. *Elizabeth Gair* (Lightbody).—A crimson-laced variety; has some points of great refinement about it, and appears very smooth. It shows a slight disposition to reflex, but in the face of this drawback has a decided advantage over many sorts deemed worthy of cultivation. *Maritana*, by the same raiser, is a showy red-laced flower, but lacks the sterling properties found in the preceding. *Theresa* (Marris).—A fine large back-row flower, with smooth, but rather narrow petal, is a remarkably steady lacing flower; and *Geraldine*, another bantling of mine, a smaller variety, with lacing of a peculiar shade of purple, will be found eligible for the front row. *Laura* (Wilmer), is much too early, but if grown strong, and the earliest flower-stems cut away, this good old variety may be brought out in fine style; whilst *Sappho* (Colcutt) can yet be brought out in all its glory. To the varieties here enumerated, add *Ada* (Read), *Lola Montes* (Costar), and *Fanny* (Hardstone), with *Ganymede* and *Sir Charles Napier*, two of Mr. Looker's flowers, which, though bloomed by me under circumstances much to their disadvantage, exhibited such points of excellence, that I think they will force their way to fame—and I think, on the whole, there will be found concentrated such an array of good qualities as, with ordinary pains, cannot fail to ensure success to the cultivator for competition.—ROBERT MARRIS, *Leicester*. (*Gossip for the Garden.*)

CULTURE OF BRUGMANSIAS.—The treatment must vary according to the *time* it is desirable for them to be in flower. Supposing your plants flowered in the autumn, or at the beginning of winter, the falling of the leaves told you the plants wished for a rest. The heat was quite sufficient to keep the plants healthy. The points of the stems dying would merely show that the points there had hardly been ripened. When resting, and all the leaves, or nearly all, are fallen, Brugmansias scarcely require any water. They are so accommodating, that they will thrive in your hotbed, and thus you will have shoots and flowers early; or, if you choose to wait longer, you may keep them in the greenhouse, potting and growing on, or turn them out-of-doors, in rich soil, in June, when they will bloom in the autumn out-of-doors, and in the first part of winter, if raised carefully and repotted. Supposing, now, that you fix upon the height of your stem—and recollect that the bloom is produced on the young shoots of the current year—all that you have to do is pruning so as just to leave as many buds as you wish for shoots, and when these have grown sufficiently you will have flowers, provided the stem-buds were matured enough, and rising two or more years in age. When an old plant is obtained, all that is wanted is to snag in the head well back every year.—*Cottage Gardener.*

TWELVE BEST NEW DAHLIAS.—In the December number of last year, I observe lists of new Dahlias by Mr. Glenny, and others, are given. The following I have seen repeatedly during the past season, at the various *Exhibitions*, and private Meetings, in and around London, and I am confident they are *the best*, among about one hundred varieties, that were shown for the first time, and which are to be sent out the ensuing spring. Their respective superiority is according to the following rotation, viz.:—1st, *Bessie*, a deep yellow; 2nd, *Perfection*, good orange colour; 3rd, *Mrs. Wheeler*, a deep scarlet; 4th, *Duchess of Wellington*, pale cream colour; 5th, *Lollipop*, salmony-buff; 6th, *Miss Burdett Coutts*, fawn colour; 7th, *Yellow Beauty*, a bright yellow; 8th, *Grand Sultan*, dark maroon shaded; 9th, *Lord Palmerston*, rich scarlet; 10th, *Shaded Model*, orange shaded with buff; 11th, *Eclipse*, dark purple maroon; 12th, *Chameleon*, yellow edged with lake.—*A Londoner.*

UNIVERSAL COMPOST.—Turf cut from an old loamy pasture, such as used to lay down for lawns, about three inches thick, and laid in a heap to rot, is invaluable. This rubbed through a sieve that would let a hazel-nut through, two barrowfuls; *peat earth*, full of fibre of a spongy light nature, used for heaths, half a barrowful; and *cowdung* rotted into mould, half a barrowful, with a sprinkling of *white sand*, and small pieces of *charcoal*, well mixed together, form a compost for almost everything.—*G. Glenny.*

PROTECTING TENDER KINDS OF ROSES.—Some of the tenderest Standard Bourbon, Noisette, and Tea-scented Roses require winter protection. The best plan I have found to succeed is to prune in the head as desired, and then spread among the shoots branches of furze, securing them with tar band. This covering is such that it protects wholly from injury, and at the same time admits sufficient air to prevent the too early pushing of the buds, which, if not done, they would be liable to be damaged by early spring frost. I take off the covering about the first week in March. For dwarf plants I stick furze branches into the ground, and secure them at the place by a few sticks put round. Over the roots I lay about six inches deep of dry leaves, covering them over with a sprinkling of soil, sloping to the sides, as the Editor recommended for Fuchsias, etc.; this entirely preserves from injury.—*Rosa.*

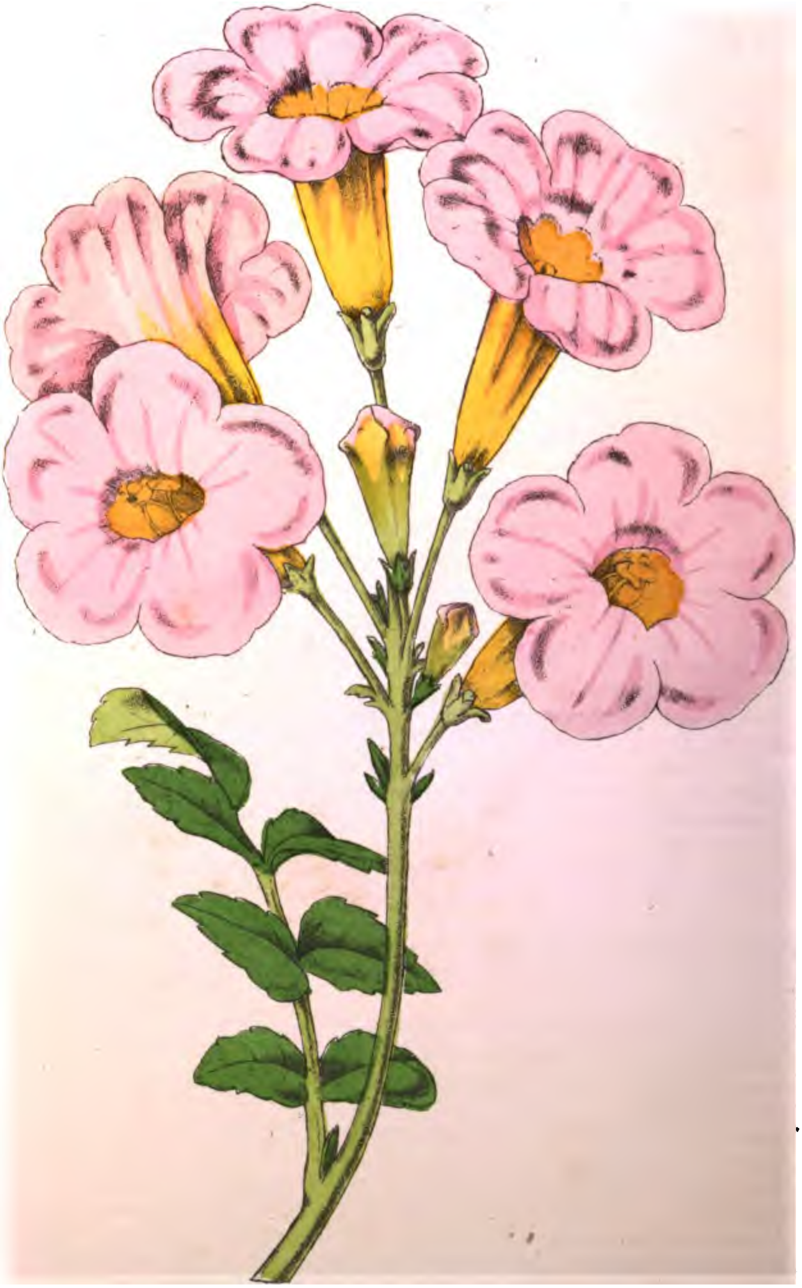
THE DEODAR, OR HIMALAYAN CEDAR (*Cedrus Deodara*).—Its botanical range extends from 7000 to 12,000 feet above the level of the sea; and in its most congenial locality attains a great height, and a circumference of above thirty feet. When young it closely resembles the real Cedar, but never sends forth spreading branches. The cone resembles that of the Cedar, and is preceded by a catkin of a bright yellow colour; so that the tree, when in full blossom, appears covered with a rich mantle of gold. These catkins are loaded with a golden dust, which the wind shakes from the branches in such quantities that the ground, for a considerable distance about the tree, becomes as it were sheeted with gold. So durable is its timber, that some used in the building of one of the wooden bridges over the Jailum was found little decayed after exposure to the weather for above 400 years.—*Thornton's Gazetteer of India.*

OXALIS BOWEIANA.—Early the last spring I had two dozen plants of *Oxalis Boweiana*, and wanting something pretty to fill up a flower-bed in a warm situation in the flower garden, I resolved to make a trial with them. I turned them out as entire as possible the first week in May. They have flourished amazingly, and bloomed in vast profusion till November. The lovely rose-coloured blossoms producing a fine effect.—*Louisa.*

TO TAKE IMPRESSIONS FROM LEAVES.—Take green leaves of trees and flowers, and lay them between the leaves of a book till they are dry. Then mix some lamp-black with drying oil, and make a small dabber of some cotton wrapped up in a small piece of leather. Lay the dried leaf flat upon a table, and dab it very gently with the mixture till the veins of the leaf are covered; being careful not to dab it so hard as to force the colour between the veins. Moisten a piece of paper, or, what is better, lay a piece of paper between some sheets of moistened paper for several hours, and lay this over the leaf that has been blackened with the liquid, press it gently down, and then lay a heavy weight upon it, and press it down very hard. By this means you obtain a very beautiful impression of a leaf with all its veins; even the minutest will be represented in a more perfect manner than they could be drawn with the greatest care. Impressions thus taken may also be coloured in the same manner as prints.

TO DESTROY RATS OR MICE.—"I was advised," says a correspondent, "to cut cork into *thin* slices, and then fry them in fat, butter, or meat gravy; the animals are very fond of them, and eat them greedily; placing the pieces for a repast, the pests in a garden soon disappear. Of course, the prepared pieces must be secured from cats, dogs, etc., or they may fall a sacrifice too. I was told that to use brown paper fried in fat, etc., would effect the same purpose as cork. I have not had occasion to try it since obtaining information."

HOW TO DESTROY THE RED SPIDER.—This pest in gardening is assuredly not so commonly met with now as it was twenty years ago. And why? Not because any recipe has become of general and systematic application, but that a much greater humidity of atmosphere is maintained in our hothouses than in former days. Humidity alone is not, however, sufficient at all times to keep the spider under; and I beg to remind the readers of the *Cabinet* that sulphur rightly applied, in conjunction with atmospheric moisture, is perfectly efficient to that end. Apply it three times a year on an under pipe, or on the least heated portion of a flue, thick as paint, and worked up with soft-soap water to make it adhere for some time. Do this in February, in May, and again in August, and maintain a wholesome amount of atmospheric moisture, not a sudden steam, but a slow, yet permanent supply, and I will engage that the spider will be rendered perfectly harmless. Do not, however, apply it on any surface that is so warm at times as to produce inconvenience to the hand when grasping it; this is a simple but safe rule.



AMPHICOME EMODI.

The Floricultural Cabinet.

MAY, 1856.

ILLUSTRATION.

AMPHICOME EMODI. Nat. Ord. *Bignoniaceæ.*

This very handsome flowering plant is a native of Northern India, discovered growing upon the mountains of Emodi, near Srinaghur, and on the Suen range of hills. Seeds of it were sent in 1852, by Major Vicary, to the Royal Gardens at Kew, where, in a cool frame, plants bloomed last October. It is an herbaceous perennial plant, the stems dying down every year. It grows from one to one and a half foot high, branching, growing very freely, and blooming profusely.

No doubt, this species will flourish in the *open ground*, in the warmer parts of our own country, and will be one of the neatest and handsomest ornaments of its size that the flower garden contains. It is increased by division, as well as by seed, and highly merits a place in every flower garden, cool frame, or greenhouse.

THE PRESENT TASTE AND STYLE OF ORNAMENTAL GARDENING.

BY A BRITISH PRACTICAL LANDSCAPE GARDENER.

As gardening was one of the first, so is it one of the most delightful occupations of man; it contributes to his necessities as well as to his comfort and pleasure. The cultivation of salutary herbs, and grain, and food for diet, was necessary to his existence; and that of flowers for their scent and beauty, and of trees for shade and shelter, was an equally necessary accompaniment. Hence the calling became divided into distinct branches, namely, kitchen, fruit, flower, and ornamental gardening. The two first, though of most real utility, are considered subordinate to the two last, more especially the last of all, which has been dignified by the title of "*landscape gardening.*"

The term has been borrowed from that given to any prospect of a country, but particularly from those works of art depicting wild or ornamental scenery, called landscape paintings, representing any space or region of a country, with its various objects.

The first ornamental gardens of which we have any good account were regular enclosures, with everything they contained arranged most symmetrically, justifying tth often-quoted sarcastic couplet of our poet Pope:—

> "Grove nods at grove, each alley has a brother,
> And one-half the lawn but just reflects the other."

This rectilinear and rectangular style of gardening was, however, quite natural to man in the earlier ages of the world; he saw Nature in all her wildest forms around him, and, as lord of the creation, he felt a kind of instinctive desire to bring her under his control; he wished a contrast and a disposition of his trees, and boundaries that would mark or secure his possessions, and at the same time exhibit his skill as well as his sovereignty. Art was then his idol, not Nature; and everything he did was to show how much the latter was under his dominion.

This artificial style of gardening continued to prevail in every civilized country, from the earliest times till after the beginning of the eighteenth century. Before this epoch, Le Nôtre, a French garden architect and ornamental gardener, was extensively employed in almost every nation in Europe; and some portions of his designs are still to be seen in France, and many imitations of them everywhere, as well in this country as on the Continent.

While Le Nôtre and his contemporaries were driving every trace of Nature from their garden scenes, the painter was at the same time enthusiastically engaged in studying her in her wildest forms, and copying every incident in real scenery which would improve his studies or enrich his pictures.

Before the period to which we are alluding, many eminent painters had immortalized their fame by the beautiful landscapes which they had painted. Among the celebrated paintings, it is remarkable that very few trim garden scenes were represented, especially as the artists, both gardeners and painters, were probably admirers of each other. This, however, is only an instance of how much the human mind is liable to be enchained by custom or reigning fashion. The idea had not yet been entertained perhaps, that the principles of ornamental gardening and landscape painting are the same, for, in practice at that time, the artists took directly contrary routes: the painter studied nature only, while the gardener busied himself in cutting and slashing vegetation into all the most fantastic regular figures his ingenuity could invent. Geometry, with its lines and rules, was his text-book; without this he could not trace a line, or prune a tree, or trim a hedge. On the other hand, Nature, in all her varied forms, and habits, and hues, was seized and imitated by the painter, tracing her on the mountain steep or in the secluded dell, by the sparkling river side or on the banks of the placid lake.

Thus, at one time, were painters and gardeners employed, both occupied in arranging the same objects; the one forming real, the other pictorial scenery, but with very different views: the first was enamoured of "neglect and accident;" the other seriously annoyed if a single leaf projected from the smooth surface the shears had made.

The love of gardening and of fine pictures, however, kept pace with each other, and were often united in the same cultivated mind; indeed, we seldom meet a virtuoso who is not equally enamoured of all the fine arts. Both gardeners and painters were employed in the embellishment of regal, noble, ecclesiastical, and manorial residences. While the exterior was graced and adorned by the former, the interior was decorated and enriched by the latter. The painter's landscape at last "bore away the bell;" the admirable scenes presented on canvas were extolled by every unsophisticated eye, and merely because they were more true to nature; and when compared with the most laboured garden dispositions, the latter sank in public estimation, and was soon followed by the cry—***Why is not every gardener a painter?***

This impression was so strong after the new light broke in upon the minds of the *cognoscenti*, that Kent, a painter by profession, was actually induced to become a landscape gardener. His new task was not a pleasant one; he aimed at producing immediate effect, as he used to do in his studio; but this was impracticable, as he found he must wait many years before he could possibly see the full effects of his dispositions of trees, shrubs, etc.

The first attempt by Kent was certainly a failure, because, in straining to do on the naked lawn what is so easily done on canvas, he made himself ridiculous, by planting dead trees, and several other freaks, which, however objectionable as the effects of time or accident in real scenery, become quite ludicrous if imitated by art and labour.

But as many places at that period were capable of great improvement by merely clearing away redundant growths, the painter's ideas were in such cases highly valuable, and their assistance was duly acknowledged; and consequently improvement by abstraction, or simple clearing away, became the rage. Hence a reformation (by far too radical, however) took place. Every connoisseur wondered how the contracted ideas of the gardener could have been so long tolerated; a kind of remorse was felt that the visual enjoyment of real pictures should have been so long withheld; a sweeping sentence of condemnation was instantly pronounced by the arbiters of fine taste, and open war was declared against every right line and right angle, and against every perpendicular form of Dutch or Italian gardening.

Soon were the venerable avenues uprooted—the airy terrace and the verdant slope levelled with the general surface of the ground; every nicely clipped hedge or arcade, pyramid or globe, were quickly banished from the lawn and gardens; right lines, whether of roads, or walks, or fences, were diverted into regularly flowing sweeps; the mansion which had been for years partially shaded and veiled by trees, was set out and exposed on a smooth and closely shaven lawn: hedgerow trees were exchanged for insulated clumps dotted over hill and dale; and straight and visible fences gave way to crooked and invisible ha ha's!

Thus the regularity of the old style was excluded, to admit the irregularity of the new; a change too recklessly made, and which has proved, in many instances, only a change from one kind of sameness to another fully as tedious and uninteresting.

Nor was the new style an imitation of what it was presumed to be founded on—namely, the painter's ideas of the most beautiful or most picturesque combinations of land, wood, and water. The opinion of the first reformers appeared to be, that to depart as much as possible from the old style, by introducing irregularity, was all that was wanted to give the new scenery a truly natural character.

The new style received the title of "English gardening;" and certainly there were some very perfect things of the kind executed in different parts of the kingdom, not, however, by clearing all the old features away, but by a judicious reservation of part of them, and not by an implicit adoption of every suggestion of the reformers, but by a tasteful rejection of many of their dogmas.

It is perfectly true that, though the guiding principles of composition of both the painter and the landscape gardener are the same, there must necessarily be a great difference in the execution; the one endeavours to gratify the present, the other future generations. The painter can brighten his lights, deepen his shadows, give play to his outlines, and mellow his tints at pleasure, so as to preserve a well-balanced display of light and shade; all his objects, whether on the foreground, in the middle distance, or in the off-scape, he can dispose as seems to him best. The height and distance and form of the mountains, the character and extent of water, the very forms of the clouds and tints of the sky are all as his fancy or taste suggests. And neither is the painter confined to the real character of the trees, and shrubs, and herbs which he introduces into his picture; a burdock, or other monstrous weed on his foreground, answers his purpose as well as the finest plant in cultivation. Such worthless plants in a painting give no offence to the beholder in any way; and, moreover, the rudest, wildest scene may be preferred for the canvas, but which is seldom or never required to be, nor indeed ever should be, formed by the gardener, because the most trifling mark of art about such a work robs it of every charm which it would otherwise possess.

The landscape gardener arranges all the ornamental planting of the park, and particularly near the house. Here comfort, convenience, cleanliness, and every other sign of high keeping and art must prevail; here all the taste and skill of the gardener should be displayed; here his ideas are peculiarly applicable; and when these foreground dispositions are fixed, he has to design and connect the scenery of the park therewith, and that of the surrounding country with both.

In the execution of all this the most refined taste, united with a large share of practical, botanical, and arboricultural knowledge, is absolutely necessary; and in this it is said the professional ideas of the painter would be available. Let us suppose, then, that a Claude Lorraine were engaged with the gardener in laying out an English garden; the trim neatness, smoothness, and regular edges of the walks and borders of the latter would offend the eye of the former, who would rather see roughness, intricacy, and indistinctness prevail. This, however, would not be suffered near the abode of refinement and affluence; but the painter would advise the gardener to conceal his hard lines; to break the uniformity of the clumps; to give variety to the masses of planting, by associations of trees and shrubs of different tints and character; to place on the foreground the strongest growing herbs, the coarsest featured shrubs, and the quickest growing trees to flank the vistas which he would wish to have extended across the park, or which would let in distant objects of interest in the country beyond. The painter would also advise but few single trees to be planted, without having a few shrub-like growths near their base; and also that all clumps and groups should be of one kind of tree, irregular in outline, and intermixed with under-growths, to creep out on the turf around them.

If water entered into the composition, the painter would advise it to be disposed in its natural place—the lowest ground; and whether a lake or river, he would have it as unlike a canal as possible. The natural abruptness of the banks he would preserve, as well as all their sinuosities and overhanging trees and bushes. Nor would he be anxious to expose too much of the water in one place, unless it would appear as a reach, either advancing towards or receding from the eye, for the sake of the reflections from the ripple on its surface. If a lake, he would choose to have it of a very irregular shape, and as much diversified by trees and islands as its size would allow, carefully masking its extremities, if such were too visible.

If buildings of any description, either for use or ornament, were in the landscape, the painter would advise them to be partly concealed, and only allowing the most ornamental or characteristic angle to jut out from among trees. If the park was of a finely undulating surface, consisted of smoothly rounded knolls, with winding dips between, the painter would adapt the forms of his groups and thickets, and the characters of the trees to correspond. On the other hand, if the environs presented strong natural features, as cliffs and rugged declivities, deep ravines forming the beds of mountain streams, etc., he would add such accompaniments of vegetation, alpine and aquatic trees, etc., as would harmonise with the general aspect of the place, so as to produce (whatever may be the character of the district) a well-connected and harmonious whole.

Now if all this would be advised by a painter, or an amateur having a "painter's eye," it differs not a jot from what would be done by every landscape gardener who knows his, business, or who deserves the name. Hiding the hard lines in the dressed ground, and employing more under-growths among the trees in the park, are the only additional amendments in the common practice which the painter could recommend in laying out a park in the English style. He would also object to any great extent of lawn being seen from any principal station, because nothing is so horrifying to a painter as great blotches of any one colour on the canvas, without chequering of shadows, of flocks or herds, or of other objects admitting variety of tints; and therefore a park laid out by a painter would be rather a series of diverging glades, than a park dignified by the grandeur of its vast masses of wood and its expansive extent of verdant turf.

That many of our parks, laid out in the style last alluded to, are lifeless and uninteresting, must be acknowledged. In passing through them, though they may have an air of grandeur suitable enough for a regal or ducal palace, yet no part of such scenery would be admired by the painter, because wholly unfit for the canvas. Hence it may be inferred that an English landscape gardener's park may be very suitable for a residence, and yet by no means equal to the ***beau idéal*** of a connoisseur, who may be blessed or plagued by possessing a painter's eye. Still it is very possible to bring the extremes nearer together; to diversify and enrich the naked tameness of the "capability" style; and to soften the asperities, and qualify the exuberance of imagination observable in some of the most celebrated paintings. I intend to continue the subject in future numbers of this Magazine.

DESCRIPTIVE REMARKS, ETC., OF ANCIENT WRITERS ON FLOWERS.

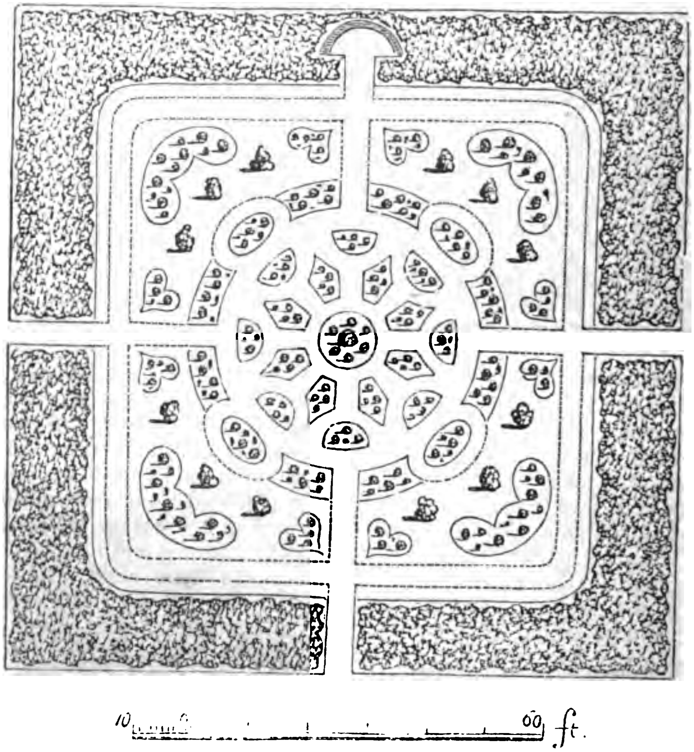
BY A VETERAN GARDENER.

THOUGH an elderly person, I have no prejudices against modern improvements, but, on the contrary, rejoice to hear of every new discovery in any art or science, yet may I not be permitted to retain some respect for antiquity, while Virgil's Georgics are still allowed to give useful hints upon farming and on the management of bees? for nature is the same in every age, and the wisest of men has said, "that there is nothing new under the sun." We should not therefore conclude that this generation alone has cultivated flowers successfully, nor implicitly believe, with the writer of an article in a late number, that there were not many handsome double Pinks before the year 1772, as I find described in Parkinson's work, published before 1656, several beautiful Carnations which we have lost; and he says of Pinks, both double and single, "the number was so great, that to give descriptions of them all were endlesse." When a child, I often gazed dmiration on the flower pieces painted some centuries ago, where magnificent Carnations were often the most conspicuous objects; and, though innumerable plants of every kind have been introduced into Great Britain lately, or increased by hybridizing, it must be admitted that most of our ***sweetest flowers*** were cultivated by our ancestors, and that much information concerning them may be gathered from old authors. From my childhood the Carnation has been my favourite flower, and since the first number of your interesting Magazine I have watched for every article respecting it; but I found there nearly the same treatment recommended—mixed composts and frames for protecting the plants during winter; but all cultivators of Carnations have not frames for every plant of Geranium, Auricula, or Carnation they wish to shelter, nor have they time or patience to wait till the wire-worm has been banished from their newly mixed composts. The most enthusiastic lovers of gardening are not always the most wealthy; to such alone my hints may be useful. I have often witnessed, in spring, the death of many a valuable plant of Carnation which had appeared in vigorous health in autumn, till I suspected, from observing the flourishing appearance of plants of the same kind, growing in the common borders of my kitchen garden, that mixed composts were to be dreaded.

I found from experience, that the common soil of my garden, where cabbages had been planted the year before, mixed with sand, was the only safe soil of which I could make beds for my Carnations; I had too many to keep in frames. I learned from Parkinson, that what I was chiefly to guard against were "the bitter, sharp winds in March;" and I learned also from him that I ought to protect my plants with basket-work, or anything else ingenuity suggested, without covering them. A very old experienced gardener taught me not to remove the stakes to which they had been tied during the summer, and not to throw away nor transplant my old plants, otherwise I might gather no seed the following year; as layers of a year old seldom perfected their seed. From Parkinson I had learned that "the best, fairest, and most double flowers" came from those flowers which were "best, fairest, and most double," and yet it is often said that it has only lately been discovered that seed can be obtained from some of the finest Carnations. In light, dry soil, indeed, in a situation where the sun has great power, the pods seldom swell; but in a soil like that of my garden, rather retentive of moisture, and not too much exposed to the mid-day sun, many of the pods of my Carnations swell every year, and by taking off the entire stalks and placing them inverted in a thin paper bag, in a sunny window, without examining them too closely, I have the pleasure in the following spring of shaking out of the withered pods innumerable seeds, the stalks of the plants having afforded the pods nourishment till the seeds had ripened; and I can show every summer such a collection of beautiful Carnations as might satisfy any person not ambitious of gaining the first prize at a flower show, though I suspect that I might sometimes have gained it. I always surround my plants with dry turf-mould in winter, which effectually preserves them from frost; if possible, snow should not be left on their leaves for the sun to melt.

I was much amused one severe winter day at seeing my very old infirm gardener, followed by two boys with little sticks in their hands, beating off the snow from a variety of valuable evergreens with which my house was surrounded. His occupation appeared to me very childish, but the following spring, when my neighbours had lost innumerable evergreens, scarce a withered bough, it was observed, was to be seen on mine; and as I felt then a great respect for age and experience, I hope that you will not despise these hints from—*A Veteran Gardener.*

DESIGN FOR A FLOWER GARDEN, BY T. RUTGER, ESQ.



The flower garden herewith delineated is supposed to be enclosed within a shrubbery, with three entrances, and an alcove at the further end. The clump in the centre may be changed to a pond and fountain, if a due supply of water be available.

OBSERVATIONS ON A BED OF CARNATION POPPIES.

BY A TOURIST.

Last summer I was on a tour through Lincolnshire and Yorkshire, and in the neighbourhood of Louth I was much pleased with a bed of beautiful Carnation Poppies. The bed was on a lawn, round, and about twelve feet across. It was raised to the centre; and the culture of the plants was so managed, that near the side they were in profuse bloom, and only about a foot high. On inquiry, I found it was effected by the following treatment:—The bed was enriched with vegetable mould at the centre, and gradually allowed to be less enriched to the side, a foot of which at that place was a very poor gravelly soil. The bed being six inches lower at the side than the grass, the flowers were about six inches above; and the growth being regulated as above described, the flowers formed a cone of most striking beauty. The admirable silky delicacy of the petals, their beautiful and varied colours, of scarlet, rose, pink, white, lilac, purple, striped, mulberry, and black, and consisted of *double* as well as single flowers, produced a most enchanting effect. So highly did the object gratify me, that I presumed to apply for a portion of the seed, though an entire stranger at the place; a promise of which I had given me, and which now has been realized. When I have had an opportunity of growing them, I shall be glad to send some (as they produce seed in such quantities) to the Editor of the *Cabinet*, for those readers of the work who may desire to have a portion. The same kind of poppy can be had of the general seedsmen in London and country, but not perhaps in such a beautiful variety. Those I saw blooming had been raised from selections made during several years; and far exceeded all I ever saw before. It is certainly worth while to procure some of the seeds, being so very cheap, and adopt the plan I describe, I have pleasure in strongly recommending it to the readers of the *Cabinet*. The situation selected was a sheltered one from mid-day sun and west winds, which afforded a protection to the delicate petals, that are somewhat liable to injury by their strong operations upon them.

CULTURE OF PELARGONIUMS FOR EXHIBITION.

BY A SUCCESSFUL EXHIBITOR AT THE LONDON SHOWS FOR TEN SUCCESSIVE YEARS.

Noticing several queries and remarks in the *Floricultural Cabinet*, on my plants shown at the exhibitions in the gardens of the Horticultural Society, and the Royal Botanic, Regent's Park, and of the mode of treatment pursued in the culture of this most deservedly admired flower, I most cheerfully forward for insertion the following brief detail of my practice, which has been every year so pre-eminently successful.

My usual mode of culture is to put off the cuttings in June, and as soon as they have struck root to pot them singly, each into a sixty-sized pot. Having done this, I have them put in a shady situation, where they remain for three weeks, at which time I stop them and have them removed to a warmer and full exposed situation, as by that time they will bear it without injury, and it conduces to a better and quicker re-establishment.

In September I repot them into forty-eight-sized pots, and in March into twenty-fours or sixteens, according to the size of the plants. In these pots I let them remain for blooming. The plants have usually done blooming by August; I then cut them down, and repot as described in the previous routine of treatment.

Where a superabundance of lateral shoots are produced, they are thinned, so as to leave only a requisite proportion.

CULTIVATION OF THE CALLA ÆTHIOPICA.

BY AN OLD GARDENER.

PERHAPS the following hints on the culture of the *Calla Æthiopica* may be interesting and useful to the admirers of that much-admired but, I am sorry to say, neglected flower.

It is generally known that the *Calla* (*Richardi*) *Æthiopica* thrives best when treated as an aquatic, and that, when planted on the margins of ponds or other ornamental pieces of water, it is hardy enough to endure the severity of our winters. Though it will not bloom so finely or flourish with the luxuriance, when treated in this manner, as with the ordinary culture, however, the noble appearance of the plant, mingled with the *Nymphœa, Nuphar,* etc., is peculiarly striking and beautiful.

But as every flower garden has not the appendage of a piece of water, persons are induced to cultivate this beautiful flower in pans, troughs, etc., with the plants growing in pots plunged or placed in water. This mode of treatment shows too much art, and often has a very slovenly appearance. To obviate this, I adopt the following plan:—Having a large stock of fine plants, I removed the earth from a large oval-formed clump, to the depth of eighteen inches below the surface. I then had a water-tight vessel made of the same size and depth as the bed. I gave this vessel a good coat of pitch, to prevent its rotting. In the bottom of it I placed about six or eight inches of fine gravel; this is placed principally in the middle, and brought down to nothing at the sides. Its object is to raise the plants high in the centre, should they chance to be of the same height. Having placed the pots (which should be of one size) in a regular manner, the tallest, of course, in the centre, I fill the vessel with water. Around the edge of the vessel I drive round-headed nails, about three or four inches asunder. From these nails I then stretch some fine pliable wire, lengthways, other pieces are stretched crossways; so that the whole resembles a net. With the plants growing through the meshes, on this wire I place a quantity of clean fresh moss, working it tight into the meshes of the wire, and close to the stems of the plants, keeping it pretty high in the centre, to preserve the convexity of the bed. By this treatment all clumsiness is avoided, and the vessel, water, and pots are totally concealed. The moss, lying so near the water, is, with an occasional sprinkling on the surface, kept always fresh and green; whilst its porosity admitting air and heat, the temperature of the water is considerably heightened. Nothing more noble than a mass of plants thus treated can be well imagined; the vivid green of the broad, ample, leathery-looking leaves, contrasted with the large, showy, white flowers, forms at once an object both beautiful, imposing, and magnificent.

To prevent the unseemly appearance of the pit, after the plants are taken to their winter quarters, I place a quantity of evergreen flowering shrubs, in tubs or large pots, in their place for the winter, filling the interstices with moss, in a neat manner.

SUCCESSFUL TREATMENT OF THE HEARTSEASE.

BY PENSEE.

Not having seen any article on the treatment of these universally admired flowers in the *Cabinet*, since I became a subscriber to it, I beg to forward the following remarks for an early insertion therein.

Preparation of the Soil for Planting.—In the prope rties of the Heartsease a most extraordinary improvement has been effected during the last few years, and is still proceeding with such rapidity that vast numbers are annually discarded, and their places supplied with new and improved varieties; indeed, there is scarcely a show-flower now cultivated in first-rate collections which has not been produced from seed during the last three years. In connection, however, with these facts is another, with which every cultivator of the Heartsease should be acquainted; viz., that in proportion to the rapidity with which the improvement has been effected, is the tendency to degenerate. This fact has so frequently presented itself to my observation, that I cannot doubt its correctness, and, for the purpose of rendering it evident to all concerned in the matter, I shall say a very few words on what are termed "florists' flowers" in general, dividing them into two classes; placing in the first class those flowers which have been brought to their present state of perfection rapidly, and in the second class, those which have been improved slowly, and by almost imperceptible degrees. In the first class, then, we shall find the Dahlia and the Heartsease, both of which, it is well known, exhibit considerable tendency to degenerate. In the second class we find the Pink, Carnation, Tulip, Rose, etc., which show no such tendency, or, if at all, in a very trifling degree. Without, therefore, extending these observations further, we may fairly consider the above fact as established. But it may be asked, what is this to do with the subject of this article, viz., "the preparation of the soil for planting?" It has much to do with it; for it must be observed that, of all the above-named flowers, the Heartsease, which has been improved the most rapidly, flourishes the least, or shows the greatest tendency to degenerate when planted in the common unprepared soil of the general flower-border. It is therefore evident that, as a stimulating system of cultivation has produced the present splendid varieties of the Heartsease, and as, without that stimulation, they evince a considerable disposition to go back, the natural inference is, that it is only by continually enriching the soil that they can be produced in the desired state of perfection. This is indeed the "secret," and in this consists the "art and mystery" of Pansy culture. Having therefore considered these points, we shall be enabled to judge, "with understanding," on the immediate subject of this paper, and on which the following remarks, founded on experience, are offered.

Having fixed upon a suitable situation (which, if possible, should be open to the sun until the middle of the day only), mark out a bed three or four feet wide, allowing one foot to each row of plants. Throw out the soil to the depth of eight inches; and, after having well loosened the bottom, put in a layer, at least two inches thick of fresh,[*] strong, stable manure, as free from straw as possible; and, before replacing the soil taken out, mix with it a portion of horn-dust and shavings (one-half of each), in the proportion of at least a quarter of a peck to every moderate-sized barrowful of mould, which, if very adhesive, should be lightened by the addition of a little white river or sharp pit sand—red sand generally contains oxide of iron, which is injurious to vegetation. Having well pulverized the soil thus prepared, fill up the bed to the height of six inches above the manure, slightly covering the whole with fine rich mould, taking care that the bed so filled up shall be at least three inches above the paths. Rake the surface smooth and even, and prepare for planting. Where a choice of plants can be had, preference should be given to well-rooted cuttings, choosing those with thin, smooth, solid, green or light-coloured stems, as those with thick, yellow, ribbed stems are much less likely to endure through the winter, or to grow freely in the spring. If the bed is three feet wide, plant one row down the centre, ten inches apart, and another row on each side, six inches from the edge. The roots should not be more than three inches deep in the ground; if the plants are too long to admit of this, place them aslant, so that the roots may be at the required depth.

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[*] By *fresh* manure is meant such as has not lain sufficiently long together to have undergone fermentation, by which process a considerable quantity of carbonic acid gas (which enters largely into the composition of plants) is disengaged and driven off, and the quality of the manure thereby deteriorated. The application of horn-dust to the soil is beneficial, not only on account of its strong stimulating qualities, but also from its particles undergoing considerable expansion during decomposition, by which the soil is kept light and airy, forming a kind of drainage during the wet season, and facilitating the extension of the young roots.

If the bed be much exposed to the north or north-east, I would advise that a moderate-sized garden-pot be turned over each plant during severe weather, frequently uncovering them during the day. I have found this plan of essential service, especially when the cold easterly winds prevail in the early part of the spring, or during the heavy rains which frequently fall towards the end of February. The pots should never be removed, after a frosty night, while the sun shines. Many thousands of valuable Heartsease, which stood uninjured through the winter, were lost in March last, in consequence of the frosty nights being succeeded by hot sunny days. If the plants had been shaded from the sun, they would have been saved.

Cuttings of choice kinds may yet be taken, and planted an inch and a half apart, in pots or boxes filled with equal parts of light garden mould and sharp sand, and placed in a cold frame; the plants will be ready for succession-beds next spring.

THE EFFECTS OF SITUATION AND EXPOSURE ON DIFFERENT KINDS OF PLANTS, DURING SEVERE WINTERS.

BY A COUNTRY CLERGYMAN.

As by far the greater number of plants cultivated in this country are exotics, we find they are variously affected by the changeable weather of our climate, as well as by the attending circumstances of the situation they are destined to occupy. Our knowledge, acquired by experience, of the constitution of foreign plants has supplied us with rules for our guidance in the distribution of them. If we happen to be acquainted with the native habitat of a plant, we can judge pretty accurately what place it is most likely to thrive in with us. Tropical plants, for instance, we place in the stove or conservatory; Australian, South African, Chinese, and South European, in the greenhouse; and those from the northern parts of Asia, Europe, and America, anywhere in the open air where we may have occasion for them, or which we may think best adapted for them. This is a very natural way of proceeding, but we are not always right in its application. Some tropical plants are killed by placing and keeping them in the stove; because it is not so much the latitude whence they have been brought, as it is the elevation of their habitat above the level of the sea which determines their hardiness. Many plants are debilitated by confinement in the greenhouse, and very many extra-tropical plants are lost from being placed in what is considered the warmest or most sheltered situation.

These errors are occasioned either by a want of experience respecting the constitution of the plant, or from inattention to the extreme change of temperature to which it is exposed in its new place, or from ignorance that situation and exposure change the constitution of plants to such a degree that, while one is perfectly hardy if nursed on a northern aspect, another of the same kind shall be so tender and vulnerable on a southern exposure, that it dies, or is cut down to the ground, under the slightest frost.

Want of experience concerning the constitution of a newly imported plant may be said to be an excusable want of judgment; because we have no means of knowing without experience, there being no general rule to guide. If, indeed, we are told that it is an annual from a warm country, we may safely conclude that it will succeed in this climate during summer, as many tropical annuals do. Or, if it be a perennial herb from the same country, we may find it answer with us if it be only protected from frost. But if tropical shrubs or trees are brought to us, we cannot, from any external mark, judge whether they are liable to be killed by frost or not. If they shed their leaves in winter, it is only a sign that they are winter-resting plants, not that they are hardy; because there are several tropical plants which are deciduous, as, for instance, the silk cotton tree (*Bombax ceiba*); and many evergreens are as hardy as those that shed their leaves.

We often fail in preserving tender plants, from inattention to local circumstances. We are liable to mistake shelter for warmth. Frost and the north and east winds are most dreaded in this country. A southern exposure, whether for the abode of animals, or a station for vegetables, is always considered the most eligible, merely perhaps because it is the most agreeable to our own perceptions. But in respect of vegetables we often err in this matter, both in choosing sheltered situations and southern exposures.

Cold (or rather cold air) is always most intense in humid situations, because there is the most copious evaporation. Such situations, in this country, are either on the tops of clayey hills, or in the lowest valleys, where there is either a lake, river, or brook. These low grounds are nearer the main springs, and often abound with them, whence exhalations are ever rising, though imperceptible; of course, such a valley must always be more chilly, and more subject to keen frost than any drier or more elevated situations. Such glens, provided they are open to the south, are chosen as the most suitable for tender exotics, merely because they are more sheltered from the northern blast. In the summer indeed, such a locality is most favourable to the quick and strong growth of every plant. The air, being generally calm and moist, conduces to vigorous expansion; and the very coolness of a summer's day or night, as felt in such places, is most propitious to luxuriant vegetation.

These circumstances, however, instead of being beneficial to tender exotics, have a directly contrary effect; the summer excitement only renders them less able to bear the frosts, which fall upon them with redoubled intensity in winter. And instead of the slow and sturdy growth which would have happened to a plant on a dry and breezy hill, or on a northern aspect, we have an enfeebled nursling, unfit to bear the rigours of our climate, from sheer mismanagement.

Many proofs of the truth of these statements may be adduced, but we presume they are unnecessary, as the facts must have been repeatedly observed by our readers in general. The fact, however, is most important, not altogether for the sake of naturalizing exotic plants, but for fixing the sites for gardens and orchards, which, if misplaced at first, give cause ever after for regret.

Not only do the exhalations from a moist valley generate cold, but the cold air which descends upon the hills after sunset is said to "slide down" and settle in the lowest place. So firmly is this believed, and acted on by a well-known horticultural philosopher, John Williams, Esq., of Pitmaston, near Worcester, that in all cases where a garden is made on ground sloping to the south, that gentleman invariably advises the lowest boundary to be a hedge; or if a wall, it be raised on grated arches high enough to allow the escape of the cold fleece of air accumulated within the garden. On the same principle, whatever may be the aspect, the upper boundary wall should be high and close, to intercept the descending current and divert it round the ends.

From these circumstances, then, it is fair to conclude that low situations should never be chosen for garden sites, or as the best places for tender exotics.

There is another circumstance, not yet adverted to, which operates injuriously on tender plants in sunny and sheltered valleys. There, they are sooner affected by the returning warmth and solar beams of spring, and hurried into a premature growth long before frosts are over, or the summer temperature confirmed. They are awake and putting forth their tender leaves and shoots before the exposed residents of the hill are in the least acted on. The first have their sap liquefied and in motion; that of the second is clammy and at rest; the first suffer, because they have to sustain four degrees of frost perhaps, when least prepared for it, while the second have only to bear two degrees, and are otherwise fortified against it.

The native plants of the frosty regions of Siberia suffer greatly from late frosts when introduced into British gardens, not from the severity of our seasons compared with that of their own, but entirely from the changeableness of the former. In Siberia the winter sets in at once, and the surface of the ground is soon covered with snow; every vegetable becomes instantly torpid, and in this state remains in perfect safety till the return of spring, or rather summer, as there is scarcely any spring season in that northern clime,—no intermission of mildness to excite, and frosts to destroy the tender plants, as is so often experienced in this country.

The changeableness of our spring weather is, in fact, the greatest bar to our possessing very many plants, which, to have at all, must be guarded in some kind of building erected for the purpose. Our want of success in attempting to naturalize some exotic shrubs and trees, however, may have happened not so much from the constitutional delicacy of the plants themselves, as to the injudicious manner perhaps in which the trial has been made. Exposed situations on the north side of a hill, and on poor and dry, rather than on rich and moist soil, is certainly the most eligible station for making a trial of the constitution of a foreign plant. Here it would not be excited into too early growth by the early sun of the day or of the season, nor would the aspect induce precocious growth. Its growth would be slower, but its shoots would be firmer in texture, and consequently better able to resist the destructive effects of frozen sap.

I cannot conclude these observations without first alluding to the ideas entertained about the acclimatation of exotic plants. The notion is founded on the supposition that, as animals have a tendency to accommodate themselves to foreign climates, or to the changes of temperature of their own native place, so plants may in like manner be susceptible of physical changes which would enable them to bear great diversity of climatal temperature; but from all experience on this point it appears, from many tropical annuals long cultivated in Britain, that they have not perceptibly advanced in hardihood since the first day of their introduction. Such are the runner kidney-bean (which, by-the-bye, is a perennial); the potato and cucumber among culinary vegetables; the China aster and balsam among flowers, and the melon among fruits. All these have been perpetuated by seeds that have been produced, ever since their first introduction into this country, but without gaining any additional protective habit against frost. We may therefore conclude that plants generally have been formed for the climates to which they are indigenous, and have not that mutability of structure or of sap which would render them invulnerable to frost in a colder country, or to the incessant excitement of a warmer one without deterioration.

That many plants are now seen in the open air which were formerly in the greenhouse, or even in the stove, is well known; but this has not happened in consequence of any change in the constitution of those plants, but merely from being misplaced on their first introduction, for want of experience:—*Aucuba japonica*, one of our hardiest shrubs, was once under my care in the warmest end of a conservatory!

The effect of frost on tender vegetable bodies is mitigated by thawing it off with water before the sun shines upon them. This seems to contradict what has been before stated, as to dryness being a safeguard to plants. But the cases are different; perfect dryness is a security against frost, but when plants are loaded with frozen dew, and this allowed to be dissolved by the sun, a much more intense degree of cold is generated during the solution of the icy particles by the sun, than if they were suddenly dissolved by water. It is this increased degree of cold which ruptures the delicate vessels of the plants, and of course destroys them.

Sometimes we see the stem of a tender shrub, as a Heath, for instance, rent into many pieces, whilst the younger shoots remain unhurt. This is owing to the rigidity of the first, and the elastic texture of the second; the latter yields to the distending effects of the concealed sap, and afterwards returns to a healthy state, but the unyielding character of the old wood only renders it more destructible. The foliage of the grasses indigenous to cold countries is only withered by frost, but seldom destroyed, owing to the tenacity and elasticity of its structure.

REVIEW.

Rustic Adornments for Homes of Taste, and Recreations for Town Folk in the Study and Imitation of Nature. By SHIRLEY HIBBERD.

A CHARMING book, elegantly bound and illustrated. The subjects which it embraces are treated upon with much ability, not only are they written in a pleasing and entertaining style, but are of an excellent practical character—in fact "*it is a perfect gem,*" which we specially recommend to our readers. The contents comprise—The Aquarium. The Fresh-water Aquarium. The Garden Aquarium. The Wardian Case. Miscellaneous Ornaments for the Dwelling-room. The Aviary, or Bird-house. The Apiary, or Bee-house. The Rockery. The Fernery. Garden Scenery and Ornaments. The particulars in each department are fully and clearly described. The following on the *Fernery* is a fair specimen of this pretty and useful book:—

"THE FERNERY.'

"To-morrow, ere fresh morning streak the east
With first approach of light, we must be risen,
And at our pleasant labour to re-form
Yon flowery arbours, yonder alleys green,
Our walk at noon, with branches overgrown,
That mock our scant manuring."—MILTON.

Our first parents, if we credit Milton (as we must), were not wholly indebted to the spontaneous growths of their happy garden for their green bowers and mossy seats, but with delicate fingers wove the pliant branches into arches of umbrage, and set alleys of sweet-scented herbs before their favourite retreats. Who knows but what a Fernery was one of their choice delights. Few rustic adornments would better have become their sylvan home, where shade and coolness, fragrance and verdure, softened the song of love and the hymn of praise.

The Fernery belongs to the truly rustic rather than the rural department of gardening. Though Ferns are beautiful anywhere, and may suitably adorn the trim border, and mingle with the ornaments of formal design, they are more at home, more befitting among tree-stumps, and in boldly designed *rockwork* or water scenery, where they appear in their proper character of wildness and simplicity.

In forming rockwork expressly for Ferns, it is best to construct a square hillock of bricks and stones, the south border of which may be bounded by a high wall, to ensure the necessary shade, One side, at least, should never see the sun, one should have it winter and summer, while the other two should only occasionally bask in its beams. The requisites of an open-air Fernery are ample space, variety of sunshine and shadow, plenty of moisture, an atmosphere comparatively pure, alternations of slopes, hollows, and acclivities of surface, and good shelter from winds and frost.

In town localities, it is difficult to establish Ferns in the open air, owing to their delicacy of constitution, and impatience of a dry or smoky air; but in the suburbs of London, any of the Ferns that are ordinarily grown in the open air will succeed, as we know by experience, and would name some very flourishing *Fern Gardens* at distances varying from two and a half to six miles from St. Paul's.

(*To be continued.*)

NOTES ON NEW AND SELECT PLANTS.

78. Cattleya bicolor. Nat. Ord. *Orchideæ.*—A native of Brazil, introduced into England by Messrs. Loddiges. The plant is of medium growth, and each blossom about four inches across. Petals and sepals broad, leathery, spreading, of a coppery brown colour slightly tinged with green, and the *labellum* long, narrow, of a rich rosy purple, paler towards the end, and there having a delicate yellowish white fringe. (*Fig. in Bot. Mag.*, 4909.)

79. Cymbidium chloranthum. Nat. Ord. *Orchideæ.*—A native of Nepal, from whence it was obtained by Messrs. Loddiges. The leaves are eighteen inches long, and one and a half broad. The flowers are produced *numerously* in a long raceme, and each blossom is an inch and a half across; petals and sepals narrow, of a yellow-green colour, spotted with blood-red at the base. *Lip* broader than the petals, of a yellowish white, spotted with blood colour at the base. The *column* is *yellow*, sprinkled with numerous blood-coloured dots. A very interesting species. (*Fig. in Bot. Mag.*, 4907.)

80. Correa cardinalis (*Scarlet flowered*). Nat. Ord. *Diosmeæ.* —It is a native of South Australia, from whence Messrs. Veitch

obtained it. It there forms a handsome bush of about a yard high, and blooms in profusion. Each leaf is about an inch long and a quarter of an inch broad. The flowers are *drooping*, tube shaped, each being an inch and a quarter long, of a rich scarlet colour, with a yellow tipped end. It is a charming species, begins to bloom in the greenhouse in March, and continues long to be highly ornamental. (*Fig. in Bot. Mag.*, 4912.)

81. PENTAPTERYGIUM FLAVUM. Nat. Ord. *Vacciniaceæ.* Syn. *Thibaudia flava.*—It is a native of the Duphla Hills, in north-eastern India, where it was discovered growing upon trees (similarly to many of the drooping orchids), along with *Rhododendron Nuttallii.* Seeds being obtained by Mr. Nuttall, and plants raised, they have bloomed at Nutgrove, Rainhill. It is a *shrubby* plant, having stout *woody* branches; the leaves are much like those of a vigorous rough-leaved *Siphocamphylus.* Each blossom is tube shaped, an inch long; they are produced numerously, in rather short racemes, near to the end of each shoot. By proper attention it will, flourish grown *erect*, but in its native character it grows as an *epiphyte on trees*, in shady forests. It flourishes in a temperate climate, as the greenhouse, etc. (*Fig. in Bot. Mag.*, 4910.)

82. ABRONIA UMBELLATA.—This pretty neat-flowering plant was introduced a few years back, and was then generally considered a very delicate-growing plant. We have seen it flourish most admirably, and bloom very freely, trained against a brick wall having a south-west aspect. The plants were raised in-doors, and turned out into the open air border of rather strong loam, in front of the wall. Its numerous heads (Verbena-like) of rosy lilac-coloured flowers are interesting and pretty. (*Fig. in M. Van Houtte's Flor. des Serres*, 1095.)

83. SPIRÆA REEVESIANA. Var. *flore plena.*—This very pretty variety was originally discovered in China, by Mr. Fortune, who introduced it into England. It forms a neat shrub, each leaf nearly two inches long, broadish lance shaped. The flowers are produced in handsome corymbose heads, each having about thirty pure white *double blossoms*, which are interesting, pretty, and ornamental. Each blossom is nearly half an inch across. The shrub is quite hardy, grows freely, blooms profusely, and merits a place in every shrub border. Plants may be procured at the principal nurseries, at a cheap rate. (*Fig. in M. Van Houtte's Flor. des Serres*, 1097.)

84. NYMPHÆA BLANDA. Syn. *N. Amazonum.*—Seeds of this very pretty flowering plant were received by Mr. Moore, Curator of the Glasnevin Botanic Garden, Dublin, from Jamaica, sent by Mr. W. T. March. It is an exotic species, of medium stature. The flowers are of a pretty yellow colour, each blossom being about five inches across, semi-double, and have a fragrance much like the *Magnolia fuscata.* It merits a place in every aquarium for exotics. (*Fig. in M. Van Houtte's Flor. des Serres*, 1086.)

85. IRIS SUSIANA.—The flowers of this very singular species are larger than those of any other Iris, each blossom being eight inches across lengthways, and six inches broad. The ground is

white, streaked, spotted, and shaded with a dark *chocolate colour*. It is a highly interesting flower. The main stem rises to about two feet high. It merits a place in every collection of bulbous plants. (*Fig. in Flor. des Serres*, 1038.)

86. CLINTONIA PULCHELLA (*varieties*). Nat. Ord. *Lobeliaceæ.*—Many of our readers know and have admired the beautiful low-growing, annual plant *Clintonia pulchella*. In M. Van Houtte's *Flor. des Serres* there are figured three pretty *varieties;* they are of similar growth, size, and habit as the above-named species, the difference is in the flowers. Var. *a*: the flowers are *blue*, with a large *white* centre, tinged with *yellow* at the eye. Var. *b*: the flowers are *white*, tinged at the eye with *yellow*. Var. *c*: the flowers are of a violet colour, with a large white centre, tinged at the eye with yellow. They are very distinct varieties, neat and pretty. The *Clintonia pulchella* differs from the *C. elegans* principally by the *upper lobes* of the blossom, which are divergent, and not contiguous.

87. MEYENIA ERECTA. Nat. Ord. *Thunbergiaceæ.*—In our last year's volume we noticed this fine flowering plant. It is a *shrubby*, bushy plant, having a tendency to climb. The leaves are oval, notched, about an inch long. The flowers are in form between those of a *Thunbergia* and the larger-flowered *Achimenes*. The tube portion is nearly three inches long, and half an inch in diameter, white, tinged inside with yellow. The front of the flower (limb) is five divided lobes, and about two inches across, of a rich violet-purple. It is a stove plant of much beauty, blooming profusely. It may be had of the principal nurserymen, at about half a guinea each. (*Fig. in Flor. des Serres*, 1093.)

88. CANARINA CAMPANULA. Nat. Ord. *Campanulaceæ.*—An old plant, long been an inhabitant of our greenhouses, and known by some persons under the name of *Campanula canariensis*. It is a soft-wooded, tall-growing plant, whose branches die down every winter. It blooms freely. The flowers are bell shaped, each being about an inch and a half long, and as much across the six-parted mouth. The blossoms are drooping, and of a rich orange-flame colour, beautifully striped and veined with purple-crimson; it blooms freely from the beginning of October to Christmas, or even later in winter. It may be had cheap at the principal nurseries. (*Fig. in Flor. des Serres*, 1094.)

89. ARDISIA SIEBOLDII.—This very handsome species was introduced from China by Dr. Siebold. It is a *graceful* shrubby plant; the leaves are about five inches long, notched, of a *shining* green. It blooms in profusion, and produces a proportionate mass of *brilliant scarlet berries;* even small plants, not more than a foot high are almost covered with these splendid ornaments, and which continue in perfection during the entire winter and spring. It is one of the most valuable plants for decoration of the stove, conservatory, etc., we possess. Plants may be had at 21*s*. each.

90. BEGONIA ZANTHINA ARGENTEA.—A beautiful addition to the

ornamental foliaged plants. The leaves are of handsome form, the upper surface is profusely dotted with silvery white blotches. The flowers are rosy pink, striped with crimson. The plant grows freely, and is of easy cultivation. It merits a place in every collection. Plants may be had at 10*s*. 6*d*. each.

91. Begonia picta.—This beautiful new species has been introduced into England by Messrs. Low and Co., of Clapton Nursery. The foliage is exceedingly ornamental, and the plant forms a neat dwarfish bush, having large leaves. The leaf-stalks and under part of the young foliage are thickly clothed with short ***bright red hairs***. The upper side of the leaves are a velvety green, with a ***frosted white*** zone in the centre; sometimes the frosted white extends so near the edge as only to leave a narrow margin of green; the under side of the leaves is of a purple-red colour, extending from the stalk halfway through, the remainder of the leaf being green, margined with red.

92. Begonia cinnabarina hybrida. The *B. cinnabarina* has a ***bulbous root***, and the stems annually die down; but the present variety possesses a ***shrubby habit***, having large leaves, and the flowers are produced in large trusses. Each blossom is similar in size to those of *B. cinnabarina*, of a vivid orange-scarlet colour. It blooms properly through winter. The above new Begonias can be had at the London nurseries, at 15*s*. to 21*s*. each.

93. Dianthus albo-nigricans.—This singularly beautiful plant is a ***hardy*** variety, raised in Belgium. The flowers are large, of a rich black-maroon, edged with pure white, and finely fringed. It can be had of Messrs. Henderson and Son, at 5*s*. each.

94. Camellia Jenny Lind.—Messrs. Henderson and Son gave £200 to Mr. Makenzie, of Philadelphia, in America, for the stock of this variety. The form of the flower is ***most exquisite;*** the arrangement of the petals to the very centre is ***perfection itself***, forming a true half-globe; white, streaked with rosy pink. The present price is from 21*s*. to 63*s*. per plant.

95. Potentilla grandiflora maculata.—The flowers are large, semi-double, of a rich yellow, with crimson blotches.

96. Potentilla coccinea flore-plena.—The flowers are large, ***double***, of a rich dark scarlet colour.

97. Potentilla lutea flore-plena.—The flowers are of a bright golden yellow, ***double***, and very showy. These Potentillas may be had at 7*s*. 6*d*. each.

QUESTIONS, ANSWERS, AND REMARKS.

Drying Specimens of Flowers.—A Young Florist is desirous of commencing with the season drying floral specimens for an herbarium, and will be glad of a hint how to succeed in the process.—*Leeds*, 1856. [In drying the specimens, care must be taken not to press them so much as to crush them; succulents, and kinds that drop their leaves, such as Heaths, should be dipped in hot water before they are pressed.

Each specimen should be placed between a sheet of brown or blotting paper, and between each filled sheet several empty ones should be placed; for the first day or two the pressure should be only just sufficient to prevent the leaves and flowers from shrivelling. When the papers are damp, the plants should be placed in dry ones, increasing the pressure after every shift till the specimens are perfectly dry.—*Editor.*]

On Hardy Ferns.—A subscriber to the *Floricultural Cabinet* requests to know where the best collection of hardy Ferns can be procured. An early answer will oblige.—*Amelia.*

A List of Plants for a Room, etc.—I shall feel particularly obliged if you or some correspondent will furnish me immediately with a select list of plants that will succeed best in a room, and whether such should be propagated afterwards by seeds or cuttings.—*A Subscriber.*

A List of Greenhouse Creepers, etc.—A Subscriber will be much obliged to the Editor of the *Cabinet*, or other reader hereof, to have the kindness to give her a list of the names of the best kinds of Creepers for a greenhouse, where no vines are kept, and what kinds will do in pots, and what soil is suitable for each. Whether Camellias do well at the back of a greenhouse, the best way to plant them, and what kind of soil to plant them in? An answer in next month's number will oblige.—*A Subscriber.*

On Soil suitable for Petunias.—You would confer a great favour if you would inform me, through the medium of your valuable *Cabinet*, what is the most suitable soil for Petunias. I have a large number of seedlings, from first-rate varieties, consequently I am looking forward with anxiety to their blooming; but they do not grow so luxuriantly as I could wish, for want of, as I imagine, proper soil.—*C. W. F.* [In a light loam, well enriched with rotten dung, they grow vigorously with us, having an inch deep of broken pots for drainage, or planted in the open bed.—*Editor.*]

On Water Plants.—I should feel greatly obliged to you or to some of your correspondents, to inform me, in the May or June number of the *Floricultural Cabinet*, what Lilies, or other water-plants (to the number of about half a dozen), are the most suitable for a small pond of eighteen or twenty feet in diameter; also whether the circumstance of ducks being allowed to use the pond would be likely to prevent their flourishing properly. May I further trouble you to tell me whether plants of the American Cranberry can be purchased of any of the English nurserymen, or whether they or the Scotch Cranberry (which I think I have understood only succeeds by running water) would make a suitable as well as useful plant for the margin of a stagnant pond? Directions as to the planting or after-treatment of the Cranberries and Lilies would confer an additional favour upon an—*Old Subscriber.*

On the Impregnation of Flowers.—A correspondent wishes to obtain information relative to the impregnation of Geraniums, in order to produce various crosses by that method. Answers to the following questions will be thankfully received. How are the male and female blossoms to be distinguished? In what state of the blossom's expansion ought the prolific powder to be applied—likewise the manner of doing it? And last, but not least, how are the plants to be managed after impregnation has been effected, so that the blossoms thus acted on shall produce prolific seed? Do give a reply in the May Magazine, and oblige—*Monus Filius.* [Pelargoniums, commonly called Geraniums, are of the kind termed bisexual, containing within a single flower both sexes, male and female. The stamens (male) are composed of two parts: one usually long and slender, by which they are fastened to the bottom of the corolla—this is called the filament; the other, placed at the top of the filament, called the anther. Each anther is a kind of cell or box, which opens when it is ripe, and throws out a dust, usually of a white or yellow colour; this is termed pollen, or farina. The pistil or pointal, placed in the centre, is composed of three parts—the germen, the style, and the stigma. The germen is always placed below the style; its office is to contain the embryo seeds. The style is placed on the germen; and the stigma is the curved portions crowning the style. When the anthers burst open and the dust appears, then it is in its perfect state. It is usual at that time the stigma is so too. When it is desired to hybridize, clip away the stamens, leaving only the pistil in such single blossom; then bring, from another kind of Geranium, a flower which has pollen (the dust) in a perfect state, and dust it upon the stigma. Care must be taken, for a day or two, that the part thus operated upon is not watered over, or allowed to be blown by a strong current of wind. This being performed vivifies the seed. Care should be taken to protect the impregnated blossoms from bees, etc., which, hovering over and alighting upon the flowers, convey pollen, and effect the process of impregnation, and by taking it from ill-formed flowers, etc., the design is defeated. To have superb new sorts, both kinds (the one impregnated, and the other from which the dust is taken) should be of first-rate form, the flower to be nearly a circle, each petal proportionate to the others in size; petals thick, edges smooth and even, and the bloom expanded well to view. Having such kinds, it is best to keep them remote from any others; and by a judicious admixture of colours, spots, etc., a beautiful progeny will be obtained. When the plant has been impregnated, as at all other times, it ought not to lack water. When the seed is ripe it must be carefully watched, as it occasionally starts off from the style and germen rapidly. When ripe seed can be obtained by July or early in August, it should be immediately sown, about an eighth of an inch, covered with fine soil, placed in a hotbed, and kept moist (not wet), and the plants soon appear. When strong enough (and that is early), they must be carefully taken up, potted in sixty-sized pots in rich loam, placed in a hotbed frame, and repotted when required. By October the plants will be strong, and may gradually be hardened. Care must be taken they are not damped off in winter; must be kept rather dry, in an airy place, near to light. When seed is gathered late in summer, it is best to save it (not where it can be dried excessively) till spring, and sow it then. When a seedling has got a foot or half a yard high, the lead should be stopped to induce the production of laterals, which often bloom much sooner than if the lead was retained. —*Editor.*]

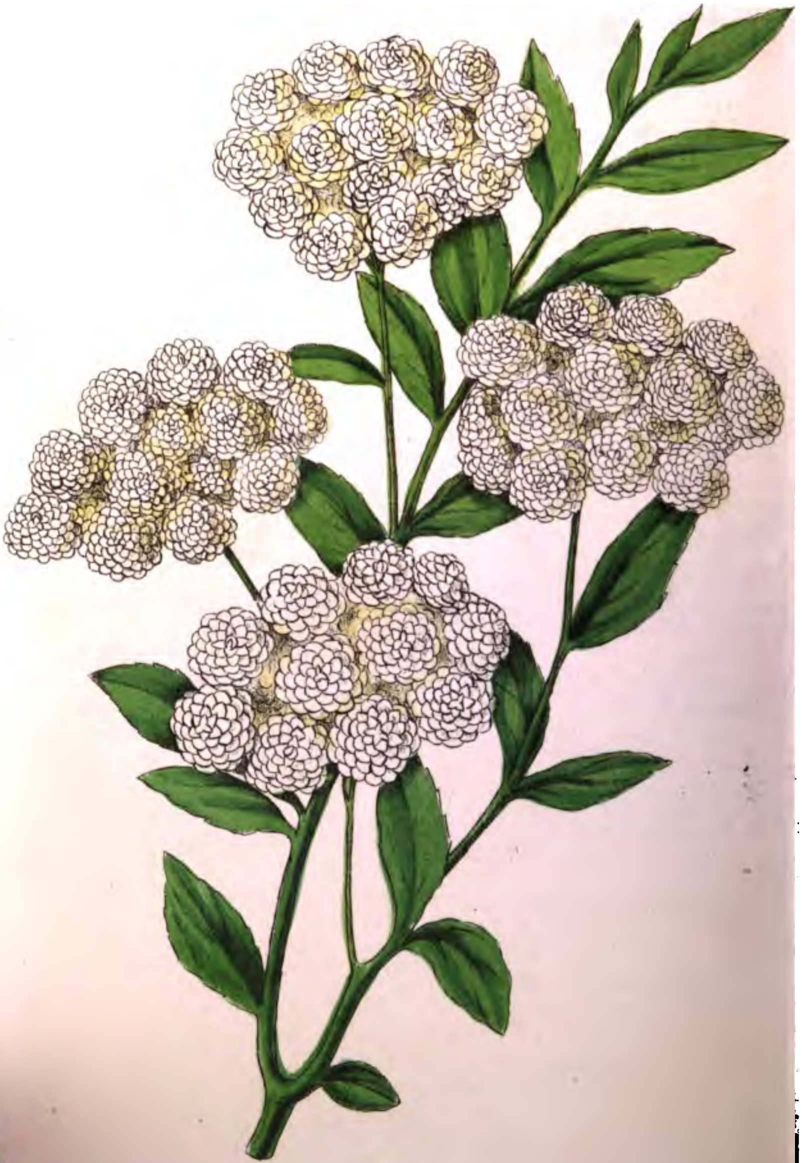
SEEDLING CALCEOLARIAS.—A correspondent recently writes—"When is the best time, and how may I best succeed in raising Calceolarias from seed?"—*Harriet.* [I am an extensive grower for Covent Garden, and in reply beg to inform her—Sow it as soon as ripe (say August) in a pot, using a very fine surface-soil of sandy peat and loam, equal parts—as the seed is very small, it is best, in order to distribute it equally, to mix it with a little sand; after sowing it just cover it with soil, gently press the surface, and place the pot in a cucumber-frame, where it must be kept shaded. When the plants appear to justify a removal without risk of losing them, remove the pot to a cooler place, as a *cool frame* near the glass, or the shelf of a greenhouse near the glass. Transplant as soon as the plants are strong enough. Before the plants are up, or during their early infant state, if watering be required, let it be applied by means of a very fine syringe. Plants thus raised must be potted into forty-eights in February, be kept robust by air, and in May will begin to bloom, and by due treatment a succession may be had in bloom till October.—*Solomon.*]

MANAGEMENT OF YUCCAS.—Pomona, a subscriber to the *Floricultural Cabinet*, will feel obliged to the Editor or some other reader hereof, if they will furnish her with the particulars of the management of the *Yucca gloriosa*, *Y. Draconis*, and *Y. filamentosa*, with the difference of the plants, the season for planting, and their age for blooming; and also if the Moutan Pæonies from China, mentioned in the February number for 1855, of the *Cabinet*, will thrive in the open air, and if they are quite hardy for the climate of Scotland, and what is the price of the plants. [*Yucca gloriosa* (Common Adam's Needle). Rises, with an upright, ligneous, thick stem, two or three feet high, having very long, narrow, stiff, entire leaves, ending in a long, sharp, black spine, garnishing the stem almost to the bottom, and in a large tuft at top; and from the centre of the top leaves rise a long branching peduncle, sustaining a panicle of bell-shaped white and purple flowers. *Yucca filamentosa* (the filamentose, or thready Virginian Yucca). Rises, with an upright, thick, ligneous (woody) stem, two to three feet high, adorned at top with a tuft of *very long* spear-shaped, stiff, blunt-pointed, sawed, *filamentose* (thready) leaves, emitting long threads from the sides, hanging downward; and from the top of the stem amidst the leaves an erect peduncle or flower-stalk, several feet high, garnished with many large white and purple striped leaves. The above species are natives of North America: the former of Canada, and the latter of Virginia. If *young* plants are put into the open ground, they (in the *cold* parts of Great Britain) require a little occasional shelter whilst young, for two or three winters. They require a *sheltered situation*, or both foliage and flowers will be damaged by the wind. *Yucca Draconis* (Dragon-tree-leaved Yucca). Rises, with an upright, thick, *brown* stem, three feet high, crowned with long, narrow, *serrated* leaves, ending in spines, and *nodding downward;* also in the centre of the leaves arise the flower-stalks, very branchy, with all the branches terminating in spikes of flesh-coloured flowers. As all the kinds of Yuccas are of a succulent nature, they should always be planted in a *light*, *dry* soil; a good portion of rotten leaf-mould mixed with sand, peat, and loam suits the plants best. The price per plant varies, according to size, from 3*s.* 6*d.* to 7*s.* 6*d.*—*Editor.*]

Treatment of the Hoya carnosa.—Not having observed any reply to your correspondent's question respecting the treatment of the *Hoya carnosa,* I send my gardener's mode of treatment, which always succeeds admirably. He uses a mixture of sand and heath-mould, and during the colder part of the year keeps the pots in the hothouse. Those plants of the *Hoya carnosa* which are propagated by planting the leaf are *long* in producing any stem; and it is better to procure a good *offset*, and lay it spirally in a pot containing the above mixture, when a fine plant is rapidly produced. This *waxen-flowered* plant shows to advantage trained along a rafter or against a trellis, and requires the free access of air and light; no other flower excels it in beauty.—*Lucy.*

Rhodanthe Manglesii, etc.—I observe *Inquirer* requests information on the management of the *Rhodanthe* and *Leptosiphon,* I therefore send the following remarks. I beg to state that last year I had a plant of *Rhodanthe Manglesii* in bloom, on which there were upwards of sixty blossoms at one time, and which, in the heat of the day, all expanding at once, and of a beautiful pink colour, were very showy in the front part of a border out-doors. Some time back I grew the *Rhodanthe* and *Leptosiphon densiflorus* in pots for spring ornament, which succeeded admirably; I therefore recommend the plan to Inquirer. The method I practise is to sow the seed in autumn, and keep the plants in a dry cool frame or cool greenhouse through winter; and in April, May, June, and July they bloom profusely in the greenhouse, and are highly ornamental. I also turn a number out of pots, into the open bed, about the middle of May, which bloom in vigour and profusion to the end of September or into October. I grow numerous pots of plants, near two feet high, which are quite a mass of bloom. I strongly recommend the culture of the *Rhodanthe* both in pots and open borders, and equally so the *Leptosiphon,* which, when sown in autumn and bloomed in pots in the greenhouse or conservatory, or a room window, is so superior in the size and beauty of its blossoms to what is usual in the open bed, as scarcely to be known to be the same plant.

Gas consumed in Heating a Greenhouse.—In recent numbers of the *Floricultural Cabinet,* remarks are made as to the cost of gas for the purpose of heating greenhouses. I have a greenhouse twenty-three feet long, by seven feet six inches wide, height in front, six feet six inches, and at the back, eight feet. It is heated by water, the water being heated by gas, which I find answers very well. The greenhouse was fitted up, last autumn, with two three-inch pipes made of very stout zinc, connected with the boiler by brass unions, for convenience of removal, if necessary. The boiler is constructed of copper, and is so arranged that a great amount of heat may be obtained from a small quantity of gas. On the coldest night this winter the thermometer in the greenhouse, at the farthest point from the pipes, did not fall below 38°. The quantity of gas consumed is about one hundred feet in six hours; but I do not usually find it necessary to burn so much, my object being only to keep the frost out, and, occasionally, to dry the house in damp weather. The pipes and boiler, with feed-cistern, contain about eighteen gallons of water. One hundred feet of gas would be sufficient, with the boiler I have in use, to heat a larger pipe than I have attached to it, or a greater length of the same size, which, of course, would raise the temperature of the house somewhat higher. I had the boiler in question made ten years ago, for the purpose of heating a garden frame nine feet by six feet, for which it was larger than was required. I have been informed, that the gas produced by the Cannel coal does not give sufficient heat for use in stoves, and consequently would not do for this purpose. It is quite necessary to have the boiler so arranged that there may be a tube to carry off the smoke and vapour arising from the gas, which, if allowed to escape in the house, would be very injurious to the plants. *Thin iron* would be a bad material for the boiler, as the gas would corrode and eat through it in a very short time. Copper, though more expensive at first, is cheapest in the end. [*Copper* is essential to success in heating.—*Editor.*]



SPIREA REEVESIANA FL. PL.

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ILLUSTRATION.

SPIRÆA REEVESIANA. Var. *flore-pleno.*

The name *Spiræa* signifies a *rope*, derived from *speirao*, to become spiral, in allusion to the stems and branches of *Spiræas* being flexible like ropes, and bearing without injury to be twisted into *garlands* for the head; hence, in former times, the branches of the fragrant, beautiful white-blossomed formed part of the *floral garland* worn by the bride at the marriage festival, and in those countries was called *Bridewort*, which subsequently became its general name.

This elegant and interesting family of plants contains about an equal number of *hardy shrubs* and *hardy herbaceous perennials*. One of the *shrubby*, the *S. hypericafolia*; is very common in Italy, and is called the *Italian May*, and is as general and ornamental there (forming hedges) as in England is the common *Thorn May* of our hedges. The plant is a profuse bloomer, and its snow-white flowers are very ornamental; when grown singly, it forms a bush of six to eight feet high. The *S. chamædrifolia* (germander-leaved) is a native of Siberia, where it forms beautiful dwarf hedges, bearing a profusion of white flowers. The inhabitants use the leaves as tea, and make tobacco-pipes of the straight shoots. The well-known *S. opulifolia*, or Snowball-tree, is one of the most deservedly admired plants our shrubberies contain, when laden with its accustomed *profusion* of elegant, pendent globes of the purest flowers. There is variety of it (quite a *dwarf shrub*) which blooms equally profuse and beautiful. Both are entitled to a place in every pleasure ground, where they contrast charmingly with the flowers of the Lilacs, Laburnums, etc.

S. callosa.—This neat shrubby species was discovered by Mr. Fortune in the north of China, who sent plants to Messrs. Standish and Noble, of Bagshot Nursery. The flowers are produced in terminal branching cymes, of a *bright rose* colour, and are very pretty.

S. laxiflora.—A dwarf bushy shrub, a native of Nepal, quite hardy. The flowers are produced in terminal spreading panicled heads, white. Its dwarf habit and free-flowering character render it valuable for the *front* of a border of shrubs.

S. Douglassii.—This fine shrubby species is of medium habit; it was discovered by Mr. Douglas in North America, on the Plains of Oregon. It is a neat-growing shrub, quite hardy, blooming in profusion. The flowers are produced in dense terminal panicles, each head about six inches long; the blossoms are of a *deep rose* colour. It is very handsome, and deserves a place in every shrubbery.

S. Lindleyana.—This, too, is a fine species; it forms a medium-sized spreading shrub, having very beautiful feathery-like foliage, somewhat similar to that of the Stag's-horn tree. It blooms very freely; the flowers are white, produced in *large*, terminal, branching, panicled heads. It is a native of the Himalayas, quite hardy, but succeeds best in dry situations. It blooms from June to October.

S. indica.—It is a twiggy bushy shrub, each main twig, or stem, having numerous *short* side shoots, which terminate in a corymbous head of flowers; the petals are white, and the centre of each blossom has a number of rose-coloured stamens, which compose a pretty eye to the flower. It blooms from July to October.

S. tomentosa.—This is an old inhabitant of our shrubberies; it forms a neat erect-growing shrub, and blooms freely. The leaves are of a silvery-white underneath, green above, lance-shaped, notched. The flowers are produced in terminal, erect, close panicles, pale *rose* coloured. There is a variety of it having *white* flowers. Both are pretty.

S. salicifolia.—A tall-growing, pyramidal bush, attaining a height of about eight feet. It bears flowers on short, terminal, pyramidal spikes, of a pretty blush colour. Blooms in July and August.

S. salicifolia, var. *paniculata.*—A very bushy shrub, reaching five feet. The branches terminate in large pyramidal-shaped heads of white flowers, with pink anthers; it makes a very pretty appearance on the edge of a lawn, in July, when it comes into profuse flower.

S. grandiflora.—Also a bushy variety, rather tall, reaching from four to six feet. The flowers are pink, borne on terminal shoots and branches, each spike being three or four inches in length.

S. canadensis makes a pretty ornament during July and August. It grows four feet high, and is of a bushy habit. The flowers are white, with blush-coloured filaments or anthers, borne in terminal branching spikes.

S. inflexa.—This bears its flowers on short side branches, about ten to twelve on a stalk, and half an inch in diameter. It attains about four feet.

S. Reevesiana, var. *flore pleno.*—This very handsome shrub, with double flowers, was received from the north of China, having been ent to this country by Mr. Fortune. It forms a very pretty object when its snow-white flowers are fully out, each being very double, nd borne in compact heads. It attains about the height of five feet, nd should be obtained by every lover of pretty flowering shrubs.

Most of our readers are familiar with several of the *herbaceous perennial* kinds, which grace not only our flower gardens, but adorn our woods and fields, we refer to the *Spiræa Ulmaria*, Meadow-sweet, or Queen of the Meadow, which abounds in moist meadows and woods, perfuming the air with the *hawthorn-like* fragrance of their pretty white flowers.

> "Each dry entangled copse empurpled glows
> With *Orchis* blooms; while in the moistened plain
> The *Meadow-sweet* its luscious fragrance yields."

THE WALLFLOWER.

BY MR. PETER MAKENZIE, WEST PLEAN, STIRLING.

> "There's not a heath, however rude,
> But hath some little flower
> To brighten up its solitude,
> And scent the evening hour.
>
> "There's not a heart, however cast
> By grief and sorrow down,
> But hath some memory of the past,
> To love and call its own."

I REMEMBER the time when I looked upon Stirling Castle as "the mightiest work of human power;" the foundations of its lofty buildings resting upon gigantic columns of basalt, and the rocky pillars affording a support to the ivy, and a home to the common pellitory of the wall. Bœce, the historian, tells us that the Romans had a station there, and that Agricola raised fortifications on the rock. Many changes have passed over the place since these warriors passed along the Ballengeich Road, to the time when Queen Victoria entered the ancient fortress. I have stood upon the spot where her Majesty stood, when she looked upon one of the finest landscapes in her wide domains, and I picked up one of the plants that grew at her feet—the *Arenaria serpyllifolia*, or Thyme-leaved Sandwort. This plant, which is found on banks and old walls, had made its way to the loftiest battlements of the Castle.

I have gathered flowers from the rocks when the sun was setting behind the highland mountains, in the flowery month of June, and was ready to exclaim—

> "What magic hues the sunset pours,
> All through a birken glade—
> Sooth, you might think that every leaf
> Of living gold was made."

I have been there on a December evening, and seen the winter sun go down beneath the heathy moors, and the blasts from the lofty Ben Lomond came rushing along the upper valley of the Forth. I stood among the rocks, and

> "The wind
> Came by, and bathed my temples with the breath
> Of Freedom's hardy blossom—the dark heath

Of Scotia's rock-ribb'd mountains. Cradled there,
Her sons have suckled freedom. From beneath,
Upborne on azure wings of purest air,
Came myriad voices, thrilling with soft glee,
From plain and fountain, rock, and forest tree.
My heart sprung forth to join
That stirring concert, that wild jubilee;
I knew the voice, I knew that it was thine,
O Liberty divine!
Therefore my heart did greet it, for I too was free."

In such situations it is pleasant, even in winter, to look upon the plant of the Wallflower, which, in floral language, we are told, stands as the emblem of fidelity in misfortune, because it attaches itself to the desolate, and enlivens the ruins which time and neglect would otherwise have rendered terrible. It hides the savage strokes of feudal time on the castle walls, fills the space of the wanted stone in the mouldering church, and wreathes a garland on the crumbling monument no longer noticed by friendly relations.

Amidst the rocks and ruins where the Wallflower abounds, the mind may receive instruction, find sermons in stone, and think upon the Rock of Ages, and be directed to that friend which sticketh closer than a brother.

The associations of the Wallflower are finely set forth in the following sonnet:—

"Cheerful 'midst desolation's sadness—thou,
Fair flower, are wont to grace the mouldering pile,
And brightly bloom o'er ruin, like a smile,
Reposing calm on Age's favoured brow.
Sweet monitor! an emblem sure I see
Of virtue, and of virtue's power, in thee;
For, though thou cheerest the dull ruin's gloom,
Still, when thou'rt found upon the gay parterre,
There thou art sweetest—fairest of the fair;—
So virtue, while it robs of dread the tomb,
Shines in the crown that youth and beauty wear,
Being best of all the gems that glitter there."

There are many varieties of *Cheiranthus cheiri*, or garden wallflowers, such as the double-flowered, large-flowered, largest, saw-flowered, rusty-flowered various, flavescent, thyrse-flowered, bloody, double bloody, tall double purple, dwarf double purple, double canary-coloured, double chestnut-coloured, double purple striped with brown, etc. Different cultivators have different modes for prolonging the flowering season of the Wallflower in gardens. To have early blooming plants in spring, one will tell us to sow early in August. To bloom from the beginning of July, sow about the middle of September; to bloom in September and to the end of the season, sow in May. Another, from one sowing in summer, will manage to keep up a bloom for a long period of the year. He will take the early and best plants of the seedbed, and transplant them into good soil and a warm situation: they will make strong bushy plants by the end of autumn. Some of them may be lifted at that season and put into pots, and placed in the greenhouse, and they will bloom early there; others may be potted and placed in a cold pit, and they will succeed those in the greenhouse, or they may be planted out early in spring in the open borders, and keep company with snowdrops and crocuses. Those in the first transplanted bed that remain, if not wanted to flower where they were first put, may be removed to other beds and borders where they may be wanted; the other plants of the seedbed may be put into poorer soil and colder aspects, and they will flower late in the season.

Although the Wallflower has long been placed among our native plants, we are informed that it is a native of the south of Europe, and is found wild in Switzerland, France, and Spain, and it is thought to be one of the earliest flowers which was cultivated in our gardens, from its being so constantly found on the ruins of our oldest buildings. The poet, speaking of the Wallflower, says—

> "For this obedient zephyrs bear,
> Her light seeds round yon turret's mould,
> And, undispersed by tempest, there
> They rise in vegetable gold."

There are some old ruins, however, where there is some difficulty, and also danger, in getting the Wallflower to grow upon them, and gardeners sometimes run considerable risk of a fall in ascending old ruins and placing small balls of moist earth, mixed with Wallflower-seed, in the wide joints of the decaying buildings.

Many may wonder why the Wallflower plants in their gardens are some seasons so greatly injured by the frost, while those growing a great height on old walls are alive and flower well. A writer tells us that the Wallflowers which grow out of the crevices of old buildings are of a much hardier nature than those of the garden, for, as they can receive but little moisture by the fibres of their roots, their stems become *firm and woody*, and able to bear the frost without injury, whereas those cultivated in the garden become *succulent*, and, consequently, more susceptible of cold.

Of late years *many beautiful varieties* of Wallflower have been imported from Germany, as crimson, with white stripes, etc. These have been originated between the Wallflower and the Stock, and well deserve a place in our gardens.

In the mouldering ruin we may see the end of those that forget God. "He shall lean upon his house, but it shall not stand; he shall hold it fast, but it shall not endure."

With all our nursing and all our care, our sweetest and fairest flowers die. In their death we may behold the emblem of our state. Man cometh forth as a flower and is cut down; the evanescent pleasures of time continue not, and it shall be for the happiness of all to seek after those perennial delights which God hath promised to give, and at whose right hand are pleasures for evermore.

REMARKS ON LANDSCAPE GARDENING.

BY THOMAS RUTGER, ESQ., DEVONPORT.

As landscape gardening may in some measure be considered as interwoven with that of floricultural gardening, I am glad to see the subject taken up by one of your correspondents for the *Cabinet*. He has entered upon a wide field, which, if he likes to pursue it, may develope many hints serviceable to the admirers of the art, and at the same time be beneficial to many of the readers of the *Cabinet*. Among the many who have written upon the subject, Gilpin's "Practical Hints upon Landscape Gardening" may be useful to such as feel inclined to study the art, at the same time it will be seen that the author is not sparing in his criticisms on those who have gone before him. Much may also be gleaned from Loudon's "Encyclopædia of Gardening," in which descriptions are given of many places of note both in England and abroad, including both ancient and modern gardening. There is a book, entitled "The Practice of Gardening," etc., by Le Sieur Alexandre le Blonde, translated by John James, of Greenwich, second edition, dated 1728. There are many well-engraved plates in it, and much of what I suppose was original matter in its day, but which is very antiquely expressed; it is, nevertheless, well worth an inspection, if it were merely for the plates it contains.

On a visit or two which I paid last autumn to the Crystal Palace, near Sydenham, it struck me, while walking through the grounds, the great advantages the landscape gardener has in having the whole of the site to be laid out at once under his control. In such a case there is room for the study of symmetry in all its bearings, whether in the geometrical or what is called the natural style of gardening—advantages in both of which have been there taken, and, as a whole, presents perhaps one of the most perfect models of landscape gardening in Europe, viz., taking into account the advantages or disadvantages which the ground presented before it was operated upon. If we select a place which has been laid out and added to at different times, we shall find much of deficiency in the symmetry it presents when compared with the gardens at the Crystal Palace, or at other places where the grounds have been laid out at once. Take Kew Gardens, for instance (where I spent several years during my early days). It is generally acknowledged that the gardens at Kew are considered as very fine, and this is verified by their being admired by the number of its visitors during the summer. But where is symmetry to be found there? Little, if any, comparatively. The principal interest excited is to be found in its productions, which, while many of them attract and please the multitude, are most valuable to the scientific admirer of plants, etc. It is true there are several striking things to be seen, in particular the magnificent Palm-house, which is a noble structure, and had it been convenient to have erected it at the end of the broad walk leading to the ornamental basin, it would have added greatly to its appearance. Were I permitted to criticise, I should rather have had the structure for the Victoria Regia somewhere at a distance from the Palm-house. Where it stands it is, of course, too diminutive to detract anything from the Palm-house, but, on the other hand, the Palm-house makes it look almost contemptible where it stands; but it might have had a respecctable appearance if placed at a remote distance from it. The Pagoda is now become an object of interest, since the avenue has been opened in that direction. It would have been a more happy circumstance, could it have been approached through the central avenue;] as it is, it stands in a diagonal direction. What is wanted now, is some object of a colossal kind at the extremity of the middle avenue, and could that on the right be extended, then something might be erected at its extremity to balance that of the Pagoda, the avenue to which will be grand, when the Deodoras are grown up. Had the house which was built near the entrance for the Palms, and which is now occupied by Bankias, etc., been erected at the extremity of the straight entrance walk, it would have had a more stately appearance than it has where it now stands, and would have formed a good terminus to that walk, something like the terminus to the straight entrance walk in the Royal Botanic Garden, Regent's Park, where the house called the Winter Garden is erected.

TREATMENT OF HERBACEOUS CALCEOLARIAS.

BY F. A. SMITH.

The latter part of summer being the best time for increasing this section of Calceolarias, I send my mode of treatment, which has been pre-eminently successful, for insertion in an early number of the *Floricultural Cabinet.*

To increase by cuttings, etc., I treat them as follows:—During October and November all those offshoots that are undermost throw out a quantity of small rootlets; the shoots being taken off, and potted immediately, establish themselves. I pot them separately into small pots, in a light sandy loam and vegetable mould, equal parts. Immediately on potting I place them in a close frame for about a month. This closeness very materially contributes to an immediate growth; for, when exposed to a stronger current of air, it has a tendency to dry the foliage and injure the plant. Whilst in the frame I keep the soil moist, but am careful not to wet the foliage, as it would be likely to rot the plants. At the end of November I have the plants placed on a shelf near the glass in a greenhouse, where they remain during the winter. In this situation they grow freely, and if the pots become filled with roots I repot into larger; this encourages the plant to grow in size, without which weak blooming shoots would in all probability push, to the injury of its proper blooming the following season.

At the end of March I repot the whole into twenty-four-sized pots, using a sandy loam enriched with well-rotted cow-dung; the latter is found very beneficial, being of a cooler nature than horse-dung, it is more suited to the Calceolaria. At the end of April, or first week in May, I repot into twelve-sized pots, using the same kind of compost. At each potting a free portion of drainage is given, to admit the water to run off easily; this admits a greater proportion of water being applied, and affords a corresponding quantity of nutriment. I use fresh water and liquid manure regularly from the potting into twenty-fours, using the liquid manure every third watering. The plants are kept in the greenhouse during the time from autumn to the close of their blooming, which is usually the end of July. At that time, the stems being withered, I repot those I wish for extra-sized plants the following year, by reducing the balls of earth and potting them into pots about half the size they had been growing in. After potting, they are placed in a cool frame, and shaded from hot sun for a month. I then expose them to the open air, placing them in the shade from mid-day sun, till about the middle of October, when I remove them into the greenhouse as before. In March and April following they are again repotted, and treated as above named during the former year. It is my practice to take off a quantity of offsets each autumn, so that I have a stock of large two-year-old plants to bloom every season.

By this mode of treatment I succeed in having plants from two to four feet high, stocked with blooming shoots in every part, so as to form a head of flowers about a yard in diameter.

Having a considerable number of plants, I usually turn out some into the open border, choosing a situation where I can have shade from eleven till four o'clock in the afternoon, the intense heat of mid-day sun being injurious to this tribe of Calceolarias, they requiring more shade and moisture than shrubby kinds do.

Having an opportunity of collecting seeds, I raise many seedling plants. As soon as the seed is ripe, which from earliest blooms will be the case by the middle or end of July, I sow it in pots placed in a shady part of a hotbed frame or forcing-house. The plants soon come up. I take care to keep the soil moist but not wet, as the tender roots are soon rotted off. When sufficiently strong to pot off, which they usually are by the middle of September, I pot them into sixty-sized pots, well drained, in a compost of equal parts of well-rotted vegetable mould and loam. After potting, they are placed in a cool frame, kept close and shaded from mid-day sun for a week or two, gradually exposing them to the air. When strong enough to bear a removal without injury, I have them taken to the cool but dry greenhouse, or dry cool pit-frame, and place them in a shady but airy situation. By the end of autumn the plants are quite strong, and will withstand a winter's treatment without injury; and by thus getting them forward, they bloom vigorously and profusely, during the following season, from the latter end of April to June. This mode of immediate sowing of the seed after gathering will not do for *late collected seed*, as *very young* plants are liable to damp off during winter.

A FEW HINTS ON FORMING AND PLANTING ROCKWORK.

BY G. C.

In laying out a Rockery, we should take into consideration our ultimate object. Should we merely desire a convenient spot for the growth and propagation of small and delicate species, we should take care to prevent the admission of plants or bushes of expanding or tall habit.

As regards delicate species, the main thing to observe is, that they shall be placed close to a stone or brick, in such a way as to be shaded by it from at least the noonday sun; it is true that the branches and leaves may soon grow beyond the shadow, but that is unimportant so long as the roots are moist. Wherever plants are so excitable as to push very early in the spring, the north side of the whole mass of rockwork should be selected for them, unless they are as hardy as Primroses and Violets. When a particular kind of soil is required, it should be provided by enclosing a space with bricks, hidden below the surface; by this means plants requiring peat, loam, clay, chalk, etc., may be made to flourish side by side. If little marsh plants are also desired, a proper place may be made for them on the north side of the general mass by sinking a hollow, puddling it, filling it with bog-earth, and shading it by superincumbent masonry. In this way, charming little things, like Parnassia, *Anagallis tenella*, Menyanthes, Drosera, Pinguicula, and Samolus may be grown within a few yards of the fragrant herbage from Dover cliffs.

As to the plants to be thus employed, it is useless to give a list of them, because, after all, the power of cultivating particular plants will depend on climate. Rockwork plants will thrive in all their wild luxuriance in Worcestershire, Hereford, and the west, which no art can keep in beauty in Middlesex and Kent. The only way of proceeding is to try experiments, to consult the intelligent nurserymen of the neighbourhood, and to observe what thrives in their care. Every dealer can furnish a list of plants suitable for rockwork, and give instructions which possess local value.

In managing plants after they are selected, the main object is to prevent their overrunning each other; for in rockwork, as well as in other associations, the strong are often inclined to bear down the weak. No prettier spring things can be found for rockwork than Aubrietia, Arabis, and some of the Alyssums; nor any summer plants more useful than some of the broad-leaved Sedums, and the Ivy-leaved Toad-flax; but they are encroaching neighbours, unless attended to incessantly. They are examples on a small scale of that curious vegetation which, in some of the West India islands, is called "the Scotchman hugging the Creole," and of which some noble specimens are to be found in the museum in Kew Gardens.

Among the various groups of plants, there are perhaps few more deserving of notice than hardy succulents, inasmuch as they may be grown with success by all classes of the community. They are plants which require very little attention; so tenacious of life are they, that many of them will flourish in situations where no other plants will live except mosses and lichens, rocks and exposed places being the situations in which they are generally found. *Sedum acre*, one of the most common Stonecrops, is often met with in rural districts, occupying the sill of the cottager's window, in pots, growing and flowering profusely. *Sempervivum tectorum*, the common Houseleek, is universally known to grow on the roofs of houses and tops of walls, and generally passed by unnoticed; but if the flowers be examined minutely, they will be found to be "no less beautiful than they are curious in their structure."

For artificial rockwork, we have no other plants that will survive during summer in the crevices and hollows of stones, to give them a lively appearance.

For growing in small vases, too, many species of Stonecrop are well adapted, such as *Sedum Sieboldii*, *S. hybridum*, *S. collinum;* and even some of the smaller sorts, as *S. album*, *S. villosum*, and *S. Forsterianum*, have a good effect planted on the surface of large vases which may contain Fuchsias, or similar plants liable to become bare at bottom. Among the various species of Stonecrop and Houseleek, there are some, such as *Sedum hexangulare* and *anglicum*, which, although they naturally live in dry situations very much exposed, yet will succeed planted in moist places, provided they are not kept too wet in winter; while, on the other hand, were *S. dasyphyllum* or *Sempervivum arachnoideum* planted on the ground, they would soon perish. Such, then, are the sorts best adapted for rocks exposed to the sun.

For those that may be planted in soil, a mixture of peat and loam, in about equal parts, will be found suitable; but for those which it may be desirable as well as necessary to plant upon stones, a somewhat different compost should be used. Many do not require much soil; still they must have something for the roots to take hold of, and that must be of such a nature as not to crumble off when dry, nor yet to be easily washed off by rain. For this, good clay should be selected, sifted heath-mould, and cow-dung; these, in equal proportions, well beat up with water until they become like bricklayers' mortar, will answer the purpose. This may be laid on with a trowel, and the plants immediately planted. The operation should be done in March or the beginning of April, in order that the plants may be a little established before the sun becomes powerful. As such plants generally grow in patches, in order to increase them they only require to be divided.

For those who may be desirous to obtain such plants, the following list contains the names of species most commonly met with:—

Sempervivum montanum
„ globiferum
„ soboliferum
„ arachnoideum
„ tectorum
Penthorum sedoides
Umbilicus pendulinus
„ erectus
Sedum Sieboldii
„ Forsterianum
„ rupestre
„ hexangulare
„ anglicum
„ reflexum
„ album
„ villosum
Sedum glaucum
„ cæruleum
„ sempervivoides
„ anacampseros
„ populifolium
„ ternatum
„ ciliare
„ cruciatum
„ spurium
„ Telephium
„ acre
„ dasyphyllum
„ hybridum
„ collinum
„ oppositifolium
„ Monregalense

If bushes are to be added to rockwork, this point will demand attention, for they soon encumber the place with their roots and light-impeding foliage. When the rockwork is on a small scale, their presence is inadmissible; but if it is at all extensive, as it should be to look well, then there is no dispensing with them, and, well managed, they produce a charming effect. The points to observe are, that they should be placed near the upper level of the rockwork, so as to increase its apparent height; that, if small, they should occupy angles; that, if trailing, they should be placed on the lowest terrace; and that if straight they should be associated with perpendicular lines of stonework, to which they will give additional effect. It is also desirable that they should be for the most part evergreens.

As bushes for rockwork are far less unmanageble than herbaceous plants, it may be useful to mention, as capital species for various purposes, all the smaller Indian Cotoneasters and Berberries, Savins, Pyracanthas, Cunninghamias, Cytisus, double Furze, if well pruned, Cistuses, Helianthemums, French (not German) Tamarisks, Clanbrazil Firs, Tree Pæonies, Yuccas, Cypresses, Deodars and Araucarias to be thrown away when too large, Laurustinuses, Mahonias, etc., and, in short, any neat-looking plant which is either naturally small, or capable of being kept small by the pruning knife. The disposition and selection of species is so much a matter of mere taste, that there is no apparent advantage in dwelling further upon it.

One other rule will complete the rapid sketcn which has thus been thrown off. The smaller rockwork is, the worse it looks, and the more difficult to keep in health, and *vice versa.* The steeper it is, the less it is suited to the growth of delicate plants, and *vice versa.* Thus, supposing that any reason should exist for making it ten feet high, it would be better to make it forty feet wide than twenty, and better still to make the width still greater; and we believe that a more charming flower garden could not be contrived than one occupying an acre or two of ground, roughly planted upon these principles, with winding walks carried among low irregular terraces, broken in every direction by masses of stones and bricks. The objection to it would be its expense.

DESCRIPTIVE REMARKS ON THE VARIETIES OF HEPATICA.

BY A LADY AMATEUR.

Among our early spring flowers possessing more than ordinary interest, one of the neatest, in my opinion, is the pretty Hepatica, in its varieties, as described below. They are well worthy of a place in flower beds or borders in sight of the sitting or drawing room windows; indeed, every garden should be adorned with, at least, some of the under-named early ornaments of the year, which are the harbingers of more extended displays of gaiety and delight, and although more frequently met with in the garden of the cottager, will afford a treat to the admirers of floriculture possessing more extended means. Having for many years successfully cultivated this pretty gem, I consider the following descriptive list of all the varieties in my garden will be acceptable.

The large single blue.—The leaves are somewhat brown, and hairy at their first coming, which after are broad; the flowers are of a clear blue, with many white stamens in the centre.

The small blue.—The leaves of this Hepatica are about half the size of the former, and grow more abundantly together; the flowers are of a pale blue colour, not so large as the flowers of the former.

The purple.—This Hepatica is much like the first, but the flowers are of a deep purple, tending to violet. Small and very double.

The lesser white.—The flowers of this variety are wholly white, of the size of the red or purple, and the leaves somewhat smaller, and of a paler green colour.

The great white.—There is no difference from the last, but that the flower, being as white, is much larger.

The ash-coloured, or Argentrive.—Both the leaves and the flowers of this Hepatica are larger than any of the former except the last; the flowers at the first opening seem to be of a blush ash colour, which, in three or four days, decays until they turn almost white, having a show of blush in them till the very last.

The white, with red stamens.—There is no difference between this Hepatica and the first white one, except that the threads in the middle of the flower being white, as in the former, are tipped at the ends with a pale reddish colour, which adds a great beauty to the flowers.

The red.—The leaves of this kind are of a little browner red colour, both at their first coming up and afterwards, especially in the middle of the leaf, more than any of the former; the flowers are of a bright blush or pale red colour, with white stamens.

The double purple.—This much resembles the single purple, but the leaves are larger, and stand upon longer footstalks, and the flowers are very thick of petals, and as double as a flower can be, of a deep blue or purple colour, without visible stamens.

The double blue.—In the colour of this flower is the chief difference from the last, except that it is a little smaller.

The peach colour.—Very neat and pretty,

The single pink.—A very abundant bloomer.

All these plants, with single flowers, grow naturally in the woods of Germany, in many places, and some of them in Italy.

They grow well in a sandy loam, the subsoil being sand. They are thus in a favourable soil for enduring the severities of winter. In order to provide for casualties, it is best to grow two or three plants of a sort in pots, which are kept in a cool frame during winter. Seed should be sown in July. Retain the plants in their seed-pots until the end of March, when plant them out in a sheltered situation at six inches apart; they will then make pretty bushy plants.

OBSERVATIONS ON HYBRIDISING AND CROSS-BREEDING.

BY MR. PETER MACKENZIE, WEST PLEAN, STIRLING.

> " 'Tis meet to mark the sky's unruffled blue
> Fast deepening into darkness, as the rays
> Of ling'ring eve die fleetly, and a few
> Stars of the brightest beam illume the blaze,
> Like woman's eye of loveliness seen through
> The veil that shadows it in vain; we gaze
> In mute and stirless transport, fondly listening,
> As there were music in its very glistening."

OUR flowers that blossom in the garden of the peasant, and those that find a place in the gardens of the great, have been compared to stars that shine in the firmament of our earth; but "passing away" is the character of many of our finest flowers, and their death long ago brings yet "sad thoughts of hope and beauty gone," and "the faint sweetness of their parting breath reminds us but of sorrowful farewells."

> " Surely it is to teach
> Our hearts, by converse with their changeful lot,
> That midst the glories, which the blight can reach,
> Our home is not."

I was naturally led into these reflections by looking over some old and long lists of florists' flowers, and the Auriculas, Carnations, Pinks and Picotees, Ranunculuses, Tulips, and Hyacinths would no doubt be the glory of the day in which they lived, yet, with all their beauty, and all the care which was bestowed upon them, few of their names will be found in the catalogues of 1856; and yet we have numerous constellations of beautiful florists' flowers, and no doubt, although many varieties die out, the stock will be kept up as long as *hybrids* and *cross-breds* can be produced and encouraged. There are some growers of plants that cannot tell very distinctly the meaning of the terms *hybrid* and *cross-bred*, thus the explanation by Dr. Lindley may be useful to some.

"If the pistil of one *species* be fertilized by the pollen of another *species*, which may take place in the same *genus*, or if two distinct varieties of the same *species* be in like manner intermixed, the seed which results from the operation will be *intermediate* between its parents, partaking of the qualities of both father and mother. In the first case, the progeny is *hybrid* or *mule;* in the second, it is simply *cross-bred*."

Several *cross-breds* are capable of producing fertile seed, and thus of perpetuating one of the *species* from which they sprang. *Hybrids*, on the contrary, are often sterile (barren), and therefore incapable of yielding seed.

Reasoning from a few facts, and from the analogy of the higher orders in the animal kingdom, it has been believed that all vegetable *hybrids* are sterile; and when sterility is not the consequence of the intermixture of two *species*, it has been thought that such *species* are not naturally distinct, however different the appearance. But facts prove that undoubted *hybrids* may be *fertile;* and when we consider that plants are not analogous to the higher orders of animals, but to the lowest, concerning whose habits we know nothing whatever, it is obvious that no analogical inferences can be safely established.

But we need not wonder greatly at the stars of our earth leaving us, when *mutability* is written throughout the habitable globe, and astronomers tell of the possible extinction of the sun. One of them says, the question cannot fail to suggest itself here, whether this light-producing power may depend in *degree* on the probably ever-changing electric state of a growing globe; whether the sun is now as he was and will be, or only in *one state or epoch of his efficacy* as the radiant source of light and heat. It seems to me most worthy of consideration whether those puzzling phenomena, indicative of an altered heat in our earth, may not pertain in part to this source; to the onward progress of our heat, given through the destiny to which law foreordained him. The changes referred to stretched over epochs in which man was not present, and when, of course, their progress could not be marked; but even now due attention is not paid to the momentous subject; for the delicate measurement of the sun's direct strength is of greatly more consequence than that temperature which arises for the most part from a mere terrestrial meteorology. The farther heavens, however, come here in aid, and supply this gap in our knowledge, appearing to substantiate the possibility, if not the reality, of such changes. The new star in Cassiopeia, seen by Tycho, for instance, indicated some great change in the light and heat of an orb—far more, probably, than a mere orbitual motion. THE STAR *never moved from its place*, and during its course from extreme brilliancy to apparent extinction, the colour of its light altered, passing through the hues of a dying conflagration. Can aught of this be seen in the southern star, one of Sir John Herschel's spoils, which is gradually clothing itself with an extreme brilliancy? Many other stars have altered slowly in magnitude also, preserving rigorous invariability of place; and some, as Sirius, have changed colour—this star having turned from the fiery dog-star of old times, red and fiery as Mars, into the brilliantly white orb now adorning our skies. Is it not likely, then, that the intrinsic energies, to whose development these phenomena must be owing, act also in our sun? That, in short, he also may pass through phases filling up myriads of centuries; once, it may be, shining on Uranus with a lustre as burning as that which now dazzles Mercury. How vast are the effects involved in such a change! The rays of the sun are not merely light-giving, for combined with these, in the same beam or pencil, there are rays whose function is heat-giving; and others equally distinct, which are productive of chemical influence. Now, in the probable march of our luminary, how great a variety in the relations of these three systems of rays may be involved, and of course, what diversities in his action on his dependants! Imagination, clinging to such conjectures, passed to the august conception of this master of surrounding worlds, this majestic globe, himself organized, progressing slowly through his destiny; even acting, as he moves onward, on the inner and proper principle of each planet, drawing from it (which also may itself vary, according to some intrinsic energy or law) every form and manifestation of which it is capable, and conducting them all through a long and wondrous history. How emphatically does even this guess inform us that we have only *sketches* of the history of things—that a leaf or two of the mystic volume is all that ever will be read by man.

From this lofty subject we may descend to our flowers, and say—

" Stars they are, wherein we read our history,
As astrologers and seers of old;
Yet not wrapp'd about with awful mystery,
Like the burning stars which they beheld.

And with child-like, credulous affection,
We behold their tender buds expand;
Emblems of our own great resurrection—
Emblems of the bright and better land."

REMARKS ON THE FUCHSIA AS A PLANT FOR FORMING HEDGES.

BY HENRY BURY, ESQ.

No adequate conception can be formed of the beauty of a hedge of *Fuchsia virgata* or *gracilis*, or any of the old and hardy sorts of this beautiful genus, which produce a vast profusion of lovely pendent blossoms. It must be seen to be appreciated.

The following mode of treatment is recommended to ensure success:—

Procure good strong plants with a straight stem, or if any old plants of *Fuchsia virgata* or *gracilis* are growing in the open border, take them up in the spring, and divide and pot the rooted suckers. Pot each sucker into a 24-sized pot, in a compost of one-half well-rotted leaf-mould, and the other rich sandy loam. The newly potted plants should then be placed in a hotbed frame for a fortnight, in order to cause the roots to be excited, after which they can be removed into a pit or greenhouse. Tie each plant up to a straight stick, to which the leading shoot is regularly secured. Cut back all lateral shoots when they get about six inches long, so as only to leave one joint upon each. This shortening is repeated through the season, the inducement to which is, to cause the leading stem to grow vigorously, and at the same time to retain short laterals to push from, when the lead has reached the desired height.

About the middle of June the plants should be shifted, with balls entire, into pots a foot in diameter at the top, using the same kind of compost as before. Keep the plants still in the pit or greenhouse. During the whole of summer they should be *liberally* supplied with water at the roots, and occasionally syringed over the tops. At the end of the season, the leading stem of each will be four or five feet high, and abundantly furnished with short lateral shoots.

Keep the plants in a cool pit or greenhouse throughout the winter, and in April plant out, with balls entire. Previously prepare the ground for their reception, by taking away the poor soil to the depth of half a yard, and filling it up with a well-enriched compost. The plants should be well watered at the time of planting, and frequently during the season. Put a strong stake to each plant to secure it to during summer, and the plants will form a very handsome hedge, and bloom profusely.

Towards the end of November, the entire hedge should be covered with woollen netting, with a mesh of about half an inch square; secure this over the same by a temporary railing along the sides. The netting admits a suitable portion of light and air, but is a perfect security to the plants from injury by frost.

In April, the netting can be removed and the lateral shoots pruned back, so as to leave about six inches of each. This will form the plants into the shape of a close-set hedge. During summer they will spread and bloom profusely.

ON THE CULTURE OF THE AMARYLLIS TRIBE.

BY MR. JAMES SMITH.

SHOULD the following directions be thought worthy of publication in the *Floricultural Cabinet*, they are quite at your service. To those who possess a small stove, I cannot too strongly recommend to their attention the genus Amaryllis, containing, as it does, so great a number of species, varieties, and hybrids, which in point of beauty are not surpassed, and I doubt if they are equalled, by any other genus found in British collections. Most of the Amaryllises are free-flowering plants, and all of them are of the easiest culture.

I am aware that some of the kinds may be flowered in an ordinary greenhouse, but I find they do better by placing them on the front flue of a vinery. From the 1st of April, the time they are brought into the vinery, they are kept in an increasing temperature, gradually rising from 50° Fahrenheit to 60° during the night; here they remain till about midsummer. They are at first freely supplied with water, and this is continued throughout their flowering season, generally April and May, and still further on, so long as the foliage appears to be in a rapidly growing state. In reference to this particular, some experience is necessary; for most of the kinds will continue to grow, more or less, so long as water is supplied to them. It will, however, be generally found that if the bulbs have been in a dormant state from midsummer of the preceding year, they will commence growing freely when taken into the vinery, and the foliage will be fully matured by the end of June or July; and even previous to this time it will generally be advisable considerably to lessen their daily supply of water. About this time, I place them close together on a shelf in some airy and dry part of the vinery, where they are at the same time exposed as much as possible to the full influence of the sun. In this situation they remain till the grapes are matured and cut, and the house thrown open to the action of the weather, for the purpose of wintering the vines. The bulbs are, of course, allowed to become gradually dry, and the foliage entirely decayed. They are then removed to a dry shade, beyond the reach of frost, and where they are quite free from damp. A little dry litter is thrown over them, if necessary, in very frosty weather. I have sometimes taken them out of the pots, shaken the whole of the earth from their roots, and tied the labels to the bulbs. In this way they require much less room, and may be preserved from the frost with less trouble, than when kept in the pots; but I prefer keeping them in the pots, with the earth about their roots, believing that in this way they flower more vigorously. When the forcing of the vines is again commenced, and the temperature has been raised to about 50° at night, the bulbs are then all looked over, and carefully potted. The soil I use is composed of two parts yellow loam, one of clear white sand, and one of well-decomposed leaf-mould. The pots are from five to six inches diameter. They are at first very sparingly watered, and this caution ought to be particularly attended to, until they have begun to root freely. Nothing is more prejudicial to these bulbs than to keep the soil in which they are placed continually saturated with wet. Whenever this is the case, it is ten to one but the roots are rotted as soon as they make an effort to establish themselves in the soil, and will scarcely ever thrive until they have been placed in fresh soil.

When in flower, they may be taken into the parlour or drawing-room without any injury, if they can be kept near the light, so that the foliage is not too much drawn. It is usual, when they are kept in rooms, to place the pots in feeders; and to this there can be no objection, provided water is not allowed to remain about the bottom of the pot; when such is the case, it is sure to rot the roots of the bulbs, unless kept in a very high temperature indeed. I have thus endeavoured to describe my own mode of treating this exceedingly beautiful tribe of plants, with an anxious wish that they may become more general favourites.

NOTES ON NEW AND SELECT PLANTS.

98. **DELPHINIUM, MRS. GERARD LEIGH.**—A hardy variety. The flowers are of a beautiful *porcelain-blue*, with a large centre of pure white, and a yellow eye. It is very distinct and handsome.

99. **D. BELLE-ALLIANCE.**—Hardy. Flowers of a dark bright blue, with a white eye. Very dwarf and showy.

100. **D. DELICATUM.**—Flowers a fine porcelain colour, shaded with lavender, and each has a very distinct white eye. These new Delphiniums may be had at the London nurseries, at 7*s*. 6*d*. to 10*s*. 6*d*. each.

101. **AZALEA, LOUIS NAPOLEON.**—An hybrid, in Messrs. Henderson's greenhouse collection. The flowers are *full double*, of a crimson-violet colour. It is exceedingly showy, and merits a place in every greenhouse.

102. **AZALEA, THE BRIDE.**—The flowers are large, of a superb glossy white, having the appearance of white wax from the substance of its petals. It is a remarkably free-blooming plant. These *Azaleas* are from 10*s*. 6*d*. to 21*s*. each.

103. **TROPÆOLUM, LOBBII TRICOLOR.**—This very beautiful variety is distinguished from all others by the flowers being of a most brilliant rlet-red colour, edged and spotted with *blue*. It far surpasses ry other. It was raised in France, but may be had at the London series.

.04. **ARCTOTIS ACAULIS**, var. *speciosa*. Nat. Ord. *Compositæ*. . *Calendulaceæ* (*the Marigold*).—The old *A. acaulis* is well known many of our readers, being long an inhabitant of our greenhouses. addition thereto, three very beautiful *varieties* have been subsequently introduced, and are distinguished under the names of *A. tricolor*, *A. undulata*, and *A. speciosa*. The latter has been figured in the *Flore des Serres*, for April, 1004. It is, like the others, a *dwarf*, stemless plant, much like in appearance to a *Gazania pavonia*, but has a clear green foliage. The flowers are of a rich orange colour, with a *circular* band of crimson, inside of which is one of green, and the centre disc is nearly black, beautifully studded with numerous golden-tipped anthers. The plant spreads freely, and blooms profusely. Each blossom is about three inches across, in shape like a single common marigold, and, in contrast with its crimson and green rims, dark eye, etc., is very handsome. It will prove to be one of the most beautiful budding plants.

105. VERBENA, FAVOURITE (Henderson) is, without exception, one of the finest, and will doubtless become one of the most noted, bedding Verbenas in every garden throughout England. The trusses of flowers are exceedingly large, and of a rich *dark scarlet*. The habit is robust and free, and does not require to be pegged down to fill up empty spaces, as is too often the case; but if left to itself, it is unequalled for its uniformity of growth. The whole plant is alike covered with flowers on stout short footstalks, so that it resists the rain perfectly; the side shoots below each flower are always well set with buds, ready to fill up the places as the first flowers pass away; the foliage is handsome and plentiful, a feature that is often overlooked in this plant, as a Verbena with small leaves never looks well, nor, on the other hand, is it pleasing to see large thin foliage. It is an exceedingly valuable bedding variety.

106. PETUNIA, FAVOURITE.—This excellent variety will supersede every Petunia hitherto grown, either for bedding purposes or pot culture. Its superior qualities cannot be better described than in the words of the able and intelligent gardener, Mr. John Smith, of Peel Hall, Lancashire, who raised it:—" The flowers are moderate-sized, with a fine bold outline; colour, a rich bright scarlet, with clear white eye. It is a profuse bloomer, and makes a most effective bed; indeed, it was the most conspicuous bedding plant in the whole of our flower garden, which was filled with the showiest and most dazzling kinds of flowering plants." In consequence of the plant being a second year's seedling, the opportunity of proving its value as a bedding plant has been tried; we saw it in bloom, and assure our readers it equals the description here given.

107. FUCHSIA, EMPEROR NAPOLEON (Banks).—Deep rich scarlet-crimson; sepals extra wide, and beautifully reflexed, and of such substance that the flower has the appearance as if made of wax; corolla deep violet. This Fuchsia is the largest and finest that has ever been sent out; the size, width, and substance of its petals, with other superior qualities, can scarcely be imagined unless seen on the plant.

108. FUCHSIA, VENUS DE MEDICI (Banks).—A great novelty, and the most beautiful Fuchsia that has been introduced for many years;

tube white, with sepals of a blush pink, or white shaded and striped with pink; corolla deep violet-blue, large and beautifully formed: yet the above description will scarcely give an adequate idea of its beauty, as the colour is quite new among Fuchsias, but we have no hesitation in saying it will prove one of the finest varieties for exhibition. The habit of the plant is superior to any other white Fuchsia in cultivation; the flowers are large, well reflexed, and elegantly formed; the sepals are very long, which gives the flower a most striking appearance.

109. FUCHSIA, DONNA JOAQUINA (Banks).—Scarlet-crimson tube and sepals, the latter splendidly reflexed; the tube very short and thick; corolla violet-blue, a striking and novel colour, the texture of which is exceedingly fine, giving it the appearance of a thick leathery substance.

110. FUCHSIA, COUNTESS OF BURLINGTON (Story).—Scarlet tube and sepals, elegantly reflexed, with a beautiful pure white corolla; habit of the plant graceful. This may be considered the finest white corollaed Fuchsia yet sent out.

111. FUCHSIA, VOLCANO DI AQUA (Banks).—Rich glossy scarlet, with well-reflexed sepals; corolla violet, extra large. A wonderful flower for size, and a very free bloomer.

112. FUCHSIA, CHARLEMAGNE (Banks).—Rich scarlet; sepals well reflexed, with a large, barrel-shaped, violet-purple corolla; dwarf habit, and free bloomer. Very distinct and novel.

113. PHYTELEPHAS MACROCARPA. Nat. Ord. *Phytelephantheæ. Large-fruited Ivory-Plant.* This most useful Palm is confined to the continent of South America, where it inhabits damp localities, as the banks of rivers, etc. It was introduced to this country by Purdie, and has bloomed at Kew. It is mostly found in separate groves, rarely intermixed with other plants. The trunk is generally about six feet high, crowned with from twelve to twenty leaves of from eighteen to twenty feet in length. The segments are about three feet long and two inches broad, and mostly amount to about 160 in each leaf. The fruit is produced in clusters as large as a man's head, each containing six to nine seeds. The tree bears from six to eight of these clusters at one time, each head weighing, when ripe, about twenty-five pounds. The nut of this plant so closely resembles ivory, as often to be mistaken for the animal product. Small articles are now manufactured of it instead of the elephant's tusks. The nuts are imported into this country in great quantities, some years as much as 150 tons have been brought to England alone. They are sold at very low prices—in August, 1854, 1000 of them only realized 7*s.* 6*d.* Not only is this Palm most valuable for the ivory it produces, but when the seed first makes its appearance, it contains a clear insipid liquid, with which travellers allay their thirst. There is also a most delicious beverage made from it, and sold in New Granada at one real a pound.—(*Bot. Mag.*, 4913, 4914).

114. SAXIFRAGA CILIATA. Nat. Ord. *Saxifrageæ.*—It is found

inhabiting the mountains of Northern India. It blossoms early in spring, and is a very pretty species; flowers white, an inch and a half across. Being a well-known herbaceous perennial, farther description is unnecessary. (*Bot. Mag.*, 4615.)

115. **Cattleya Skinneri**, var. *parviflora*. Nat. Ord. *Orchidaceæ*.—An hybrid, first brought to this country by Mr. Skinner, from Guatemala; the flowers of which are small, not half the size of *C. Skinneri*, and of a dull purple. (*Bot. Mag.*, 4916.)

116. **Coffea Benghalensis**. Nat. Ord. *Rubiaceæ*.—Dr. Roxburgh states this species to be a native of the mountains of the north-eastern frontier of India, from whence it was sent to Calcutta, several years ago. It forms a small shrub, producing its flowers solitary or in pairs, at the end of the branches, each one about two inches across, tube slender, an inch long, the limb of five obovate spreading lobes, white. (*Bot. Mag.*, 4917.)

QUESTIONS, ANSWERS, AND REMARKS.

To destroy Mice in a Garden.—Being much infested with mice in my frames, will you allow me to ask your correspondents what is the most ready mode of destroying these pests? [Bury pickling jars in the ground, with their mouths even with the surface; pour a little water in them, and the mice will fall in during the night and be drowned.—*Editor.*]

Grass Seeds for a Lawn.—A clergyman wishes to know from the Editor of the *Cabinet*, or any of his obliging correspondents, what is the best admixture for sowing a grass lawn. [We recommend our clerical correspondent to try the following, which is excellent. Poa nemoralis 1 lb.; Poa nemoralis sempervirens 1 lb.; Poa trivialis 1 lb.; Festuca duriuscula 2 lbs.; Festuca tenuifolias 1½ lb.; Lolium perenne tenue 12 lbs.; Trifolium repens 4 lbs.; Trifolium minus 1 lb.; Cynosaurus cristatus 2 lbs.—*Editor.*]

Plants for a Ward's Case.—Having purchased a small Ward's case, and being a lover of plants, though only a beginner, I shall feel indebted to you, Mr. Editor, or to any of your correspondents, who would supply me with a list of such stove and warm green-house plants as are quite suitable for cultivation in my case. [*Ferns:* Asplenium ebeneum, A. diversifolium, A. cicutaria, A. flabellata; Adiantum cuneatum, A. pubescens, A. lucidum, A. assimile, A. affine; Cassebeera hastata, C. pedata; Platyloma rotundifolia; Anemidictyon phyllitidis; Blechnum gracile, B. lanceola; Pteris serrulata, P. heterophylla, P. longifolia; Doryopteris palmata; Nephrolepis pectinata; Aspidium trifoliatum; Cyrtomium falcatum; Doodia caudata; Diplazium Shepherdii. *Lycopodiums:* Lycopodium denticulatum, L. uncinatum (the blue one), L. flabellata, L. viticulosa, L. umbrosum. *Orchideæ:* Maxillaria punctata, M. rufescens, M. variabilis lutea; Brassia chlorostachya; Oncidium Suttoni; Epidendrum cochleatum; Tillandsia bulbosa; Tetranema mexicana. The Tillandsias and the Orchids should be suspended from the roof.—*Editor.*]

A Mangrove Swamp.—The banks near the lagoon were low, and the ground back of them apparently swampy, and densely covered with Mangrove trees. This tree is universal on the Mosquito coast, lining the shores of the lagoons and rivers, as high up as the salt water reaches. It is unlike any other tree in the world. Peculiar to lands overflowed by the tides, its trunk starts at a height of from four to eight feet from the ground, supported by a radiating series of smooth reddish-brown roots, for all the world like the prongs of an inverted candelabrum. These roots interlock with each other in such a manner that it is utterly impossible to penetrate between them, except by laboriously cutting one's way; and even then an active man would hardly be able to advance twenty feet in a day. The trunk is generally tall and straight, the branches numerous, but not long, and the leaves large and thick; on the upper surface, of a dark, glistening, unfading green, while below, of the downy whitish tint of the poplar-leaf. Lining the shores in dense masses, the play of light on the leaves, as they are turned upward by the wind, has the glad billowy effect of a field of waving grain. The timber of the Mangrove is sodden and heavy, and of no great utility, but its bark is astringent, and excellent for tanning. Its manner of propagation is remarkable. The seed consists of a long bean-like stem, about the length and shape of a dipped candle, but thinner. It hangs from the upper limbs in thousands, and, when perfect, drops, point downward, erect in the mud, where it speedily takes root, and shoots up to tangle still more the already tangled Mangrove swamp. Myriads of small oysters, called the Mangrove oysters, cling to the roots, among which active little crabs find shelter from the pursuits of their hereditary enemies, the long-legged and sharp-billed cranes, which have a prodigious hankering after tender and iufantile shell-fish.—*Bard's Waikna.*

WISTARIA SINENSIS.—This, without exception, is the most handsome and graceful of hardy climbing shrubs. It will succeed wherever a dry subsoil is obtainable, and where there is room for an upright shrub to grow. Far north it is found to thrive well in the open border, trained as an upright shrub, or round wooden stakes and trellis-work. In such situations it flowers luxuriantly. It is very suitable for planting against pillars, or for forming a principal feature in the covering of an arbour. In the most limited flower garden, it will form an extremely graceful object when trained to stout wirework, or wooden stakes. If planted in heavy or retentive soils, it should be placed on a mound of gravelly soil. To produce a uniform quantity of bloom, cut back the present year's shoots in autumn, to within five or six inches of the last year's joints. In summer following, each ripened side-shoot that springs from the main stem will become flower-bearing branches. No cottager's garden or wall should be without this highly ornamental plant.

CAMELLIAS ON WALLS.—The Camellia may be grown very well out of doors in warm situations, on trellises of the span form, or parallel against a wall. The ground should be composed of free sandy loam, mixed with turfy peat and leaf-mould; the border may be about three feet broad—a convenient length, and a foot and a half deep. In the bottom lay about nine inches of broken bricks and a little gravel, that the roots may have plenty of drainage, which is a very essential condition. In winter the plants should be covered with mats, taking care to cover them completely. In summer they should be watered with water in which a small portion of guano has been put. They should be trained in such a manner that their flowers and leaves may be perfectly developed.

CYDONIA JAPONICA.—This handsome shrub (better known as *Pyrus Japonica*) is particularly worthy of attention as a hardy spring-flowering shrub, especially if trained in the open border as a standard. Select one main leading stem, and cut away the other branches, fastening the leading shoot to a stake about six or eight feet in height. If thus treated, the plant, which is of a pendent habit, will speedily assume a handsome pyramidal form, of very neat appearance. When in flower, it will form a gorgeous object, being covered with fine scarlet bloom. In order to propagate it to form a stock, the following treatment will be found very successful. Cut some of the thin roots into lengths of three or four inches, which insert round a large pot, and cover with a bell-glass; or you may lay them in a south border under a wall, in rows, slightly covered with soil. They will make shoots the first season. This method is much preferable to increasing by suckers.

THE SOAP BERRY (*Sapindus saponaria*).—The nuts of this tree were formerly brought to England for waistcoat buttons; some were tipped with gold, and others with different metals; they were very durable, as they did not wear, and seldom broke. The skin and pulp which surround the nuts, are used in America to wash linen, but being of a very acrid nature, are apt to burn and destroy it. The seed-vessels lather freely in water, and will, it is said, cleanse more linen than sixty times the weight of soap; the water in which the tops or leaves have been steeped or boiled has the same quality, though in a less degree. The seeds are round and hard, have a fine polish, and are even now often used by the Spaniards for buttons. The whole plant pounded, and steeped in ponds, rivulets and creeks, intoxicates and kills the fish.

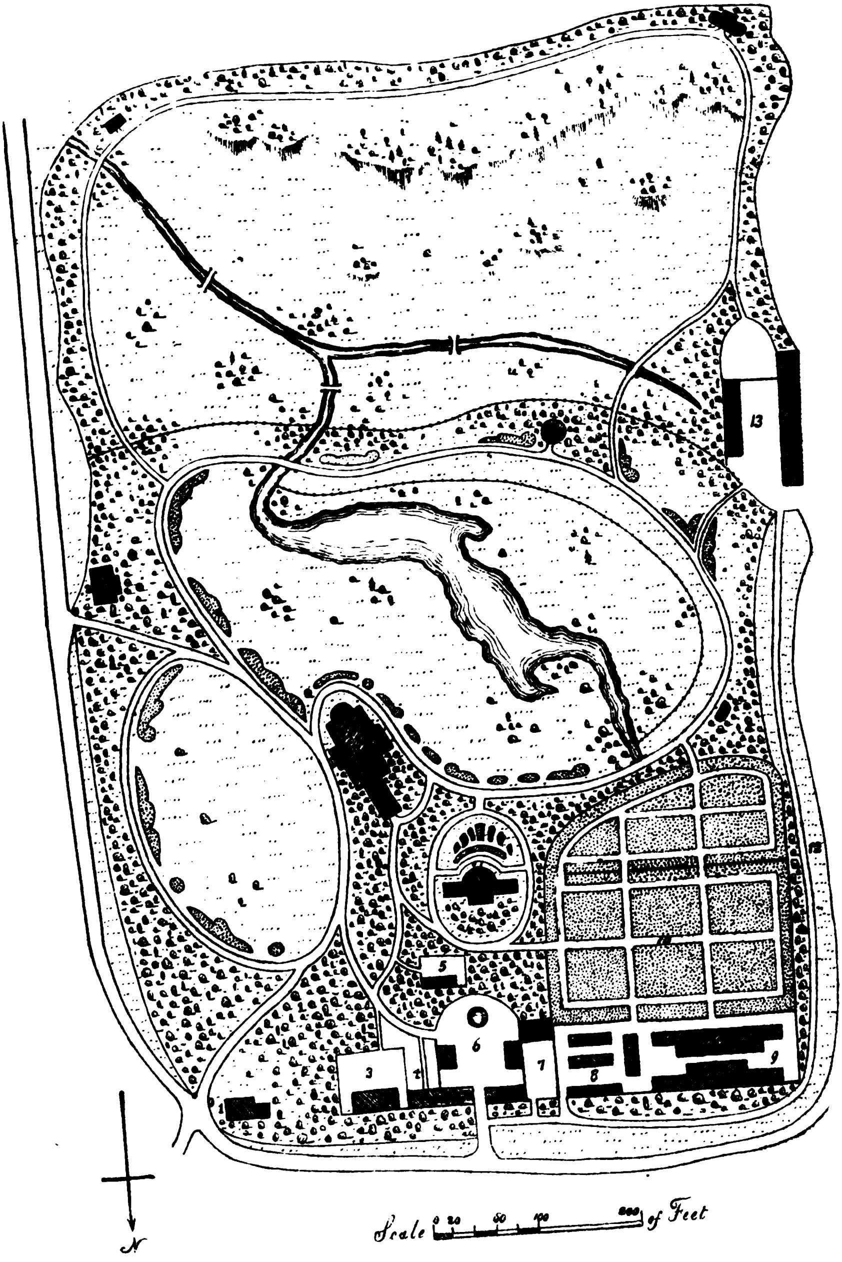
VITAL PRINCIPLE IN PLANTS.—What the "vital principle" is, or where it is to be found, I pretend not to know; like its Almighty Author, "no man hath seen it at any time," yet it is the *punctum saliens* which throbs through the system of vegetation, and the source and spring of all its functions and productions; a dense and mysterious veil, however, conceals it from the hierophant. The philosophy of man has never withdrawn this inscrutable *Ens* from the adytum where it remains enshrined. I am aware that an interdict like this is not palatable in these days, when the wit of our philosophy soars so high above *mystery*, and would deny what it cannot solve. This, however, is not the philosophy which I have been taught; neither does it contain the elements of that of Bacon; it will not do in this case to cut the Gordian knot we cannot untie; it makes the matter worse. It seems to my mind as demonstrable as any problem in Euclid, that the "principle of life" is one *sui generis*, superadded to organization. Some there are who ascribe all the phenomena of life to mere *organization*, or a peculiar arrangement of the ultimate atoms, or *molecules*, as the French call them; and some have ascribed an "innate vitality" to these atoms; others may whistle to the tune of this dance of dust, and quadrille or waltz of molecules, but I must stand aloof from their eccentricities. To-day we see the plant a beautiful living thing, arrayed in a vesture of green, and blossoming in beauty, unfurling its ensigns to the sun, and all its functions moving in harmony, and obedient to the "principle of life;" to-morrow that plant has suffered an eclipse. There is now a sad reverse; it is a leafless and a lifeless thing. Its flowers and foliage are scattered to the four winds of heaven; its "silver cord is loosed"—the principle of life has fled, and the fountain of beauty is dried up. The most exquisitely finished and most delicate specimen of mechanism, with its varied wheels, pivots, and pinions, superadded to its spring and balance, still wants its compensation curb to regulate its chronometry, and the artist's hand must wind it up; and can we doubt that the Master-key that wound up the machinery of vegetable creation hangs at the girdle of infinite intelligence? The "principle of life" is neither *heat* nor *electricity*, nor any other agent with which we are acquainted; it is far more subtile and recondite. These are merely, if the term be permitted, the *tentacula* of its operations; it can sleep for thousands of years in Egyptian tombs and mummy-cases, or remain for ages many hundred fathoms deep in the rocky recesses of the globe, or at unfathomed depths in seas and lakes. It can run the gauntlet of fire in temperatures that would scorch or scald; it can live in the crater of the volcano, or in cerements of ice, or a mantle of snow; its identity remains unimpaired through lapse of time or change of circumstance. These positions, startling though they may seem to be, can be substantiated by indubitable proof. Some curious cases have already been glanced at, and a few more may suffice. I took nine seeds out of a *roasted* apple, and every one of them grew. Malted barley has grown, and peas and cress, etc., after being roasted and boiled, were capable of germination; while the seeds of elder-berries, after being boiled, grew very well. Jessie, in his "Gleanings," mentions seeds that have grown, brought up from a depth of 360 feet, in boring for a well; and seeds found in very ancient tombs have readily sprung up. Some seeds were discovered in an ancient British tumulus; they were sown, raspberries sprung up, and fruit has been collected from the plants. A bulb was taken from the withered hand of an Egyptian mummy, and it has since grown; various seeds discovered in these mementoes of mortality have grown. Some grains of the *Triticum durum*, found in the body of a mummy, grew with me; as well as seeds of Indian corn, found in one of the graves of the Incas of Peru. A plant of *Phormium tenax*, in the *Jardin des Plantes*, which was apparently reduced to charcoal by a conflagration, has risen, like a vegetable phœnix, from its ashes. An elder-tree, near Matlock, was cut down, and subsequently remained under a stack, where it was consumed, apparently by fire; in its after-adventures, it became a corner-post, when it budded, and is now a thriving tree.—*Economy of Vegetation.*

DIELYTRA SPECTABILIS.—Although the Dielytra is properly classed as a spring-flowering plant, yet, if propagated by cuttings of the young shoots in the spring, and planted out in June in a sheltered situation, it will continue to throw up a succession of blooms till late in the season. It thrives best in a rich light soil, and should be plentifully supplied with water in dry weather. Last season I saw a bed so treated, in the front of a greenhouse, in bloom in September, and it appeared likely to continue in flower much longer, if frosts did not occur. To procure a stock of plants, a few old roots should be placed in heat in February; take off the young shoots as they advance, and strike them in a similar way to Dahlias; they should afterwards have a shift, and be kept in a frame till all danger of frosts is over, when they may be planted out as above.

On an Easy Mode of Fumigating a Greenhouse, Pit, etc.—Not having a house, I am obliged to winter my plants in a cold pit, which I have found a difficulty in fumigating, until I thought of the following plan:—Take a piece of touchpaper, and lay on it a thin layer of tobacco; then roll it up, and tie loosely. Light one end, and place it in a flower-pan in the house or pit. I think half an ounce, used in this way, is equal to an ounce with the bellows; and it is not a tithe the trouble, as it does not require any attention after being lighted.—*A Constant Subscriber.*

Best Twenty-five Pinks, and best Thirty Pansies.—*Pinks:* Adonis (Maclean), rose, changing to rosy purple. Beauty of Salt-hill (Turner), reddish purple. Brunette (Maclean), very dark, fine petal and distinct. Criterion (Maclean), purple. Colchester Cardinal (Norman), purple. Duke of Devonshire (Turner), rose, large and full. Esther (Turner), rose. Field Marshal (Hale), rose, constant and well formed. Henry Ward (Turner), purple. Harry Turner, dark purple. James Hogg (Bragg), fine dark. John Stevens (Looker), purple, stout petal. Jupiter (Bragg), purple. Lola Montes (Costar), purple. Lord Charles Wellesley (Bragg), rosy purple. Mrs. Maclean (Maclean), lilac rose. Mr. Hoyle (Looker), red, very constant. Mr. Hobbs (Looker), rosy purple. Mr. Weedon (Hale), purple, smooth stout petal. New Criterion (Maclean), red, changing to purple; very fine. Purity (Turner), rose; small, fine quality. Richard Andrews (Turner), rosy purple, a fine show flower, very smooth. Richard Smith, Esq. (Looker), purple. Sarah (Turner), dark, full, without being confused. Sir Joseph Paxton (Bragg), rosy purple.

Pansies: Alba Magna (Thomson), fine white self. Brilliant (Turner), yellow ground, bronze top petals and margin. Comet (Turner), deep yellow ground, with broad margin of reddish crimson. Duchess of Sutherland (Turner), white ground, violet-purple margin, large eye, very fine. Duke of Newcastle (Turner), yellow ground, purple margin, large dark eye, smooth, and good shape, fine. Earl Mansfield (Dickson), white ground, broad purple margin, small eye, smooth, large, and striking. Egæon (Turner), deep yellow ground, violet-purple broad margin, smooth, and fine form. Emperor (Hales), rich yellow ground, top petals and margin deep maroon, extra fine. Father Gavazzi (Holland), rich yellow ground, with broad margin of crimson-purple, and large prominent eye; a large and striking flower. France Cycole (Grieve), straw and purple. Great Britain (Parker), yellow ground, with broad margin of rich crimson-purple, large eye, good. Lady Carrington (Hunt), white ground, light purple. Lord John Russell (Turner), golden yellow ground, with broad margin of rich velvety crimson, large dense eye, fine form, and smooth. Lord Palmerston (Turner), golden yellow ground, with rich plum-purple top petals and margin, large eye, fine form. Lord Raglan (Turner), yellow ground, with broad margin of rich bronze-purple, very large and fine. Marchioness of Bath (Wheeler), white ground, blue top petals, margined with the same shade. Marion (Dickson and Co.), straw and purple, large and fine form. Marquis of Bath (Wheeler), rich yellow ground, broad dark maroon purple border, large prominent eye; an improvement on Duke of Norfolk. Memnon (Turner), rich velvety dark purple self; large, fine form, and very smooth. Miss Stewart (Hales), pure white ground, purple top petals and margin, smooth, and good form. Miss Talbot (Dickson), pale straw ground, bleaching to white; rich deep velvety purple, broad margin, smooth and fine. Mrs. Beck (Turner), white ground, and fine dark purple. Mrs. M. Hamilton (Nasmyth), white ground, and fine dark purple, large. Monarch (Hale), deep golden yellow ground, top petals rich velvety dark maroon, lower petals margined with the same colour, bold dark eye; the best of its class. National (Turner), light purple top petals, and narrow margin of the same colour. Ophir (Widnall), large yellow self. Royal Albert (Turner), beautiful shaded purple self, very smooth. Royal Standard (Dickson), pale straw, and medium margin of rich velvety purple, good eye, smooth, large, and fine form. Royal Visit (Dickson), dark purple top petals and broad margin, extra fine. Satisfaction (Turner), rich yellow ground, with medium margin of crimson-purple, very prominent fine eye, very large, smooth, extra fine.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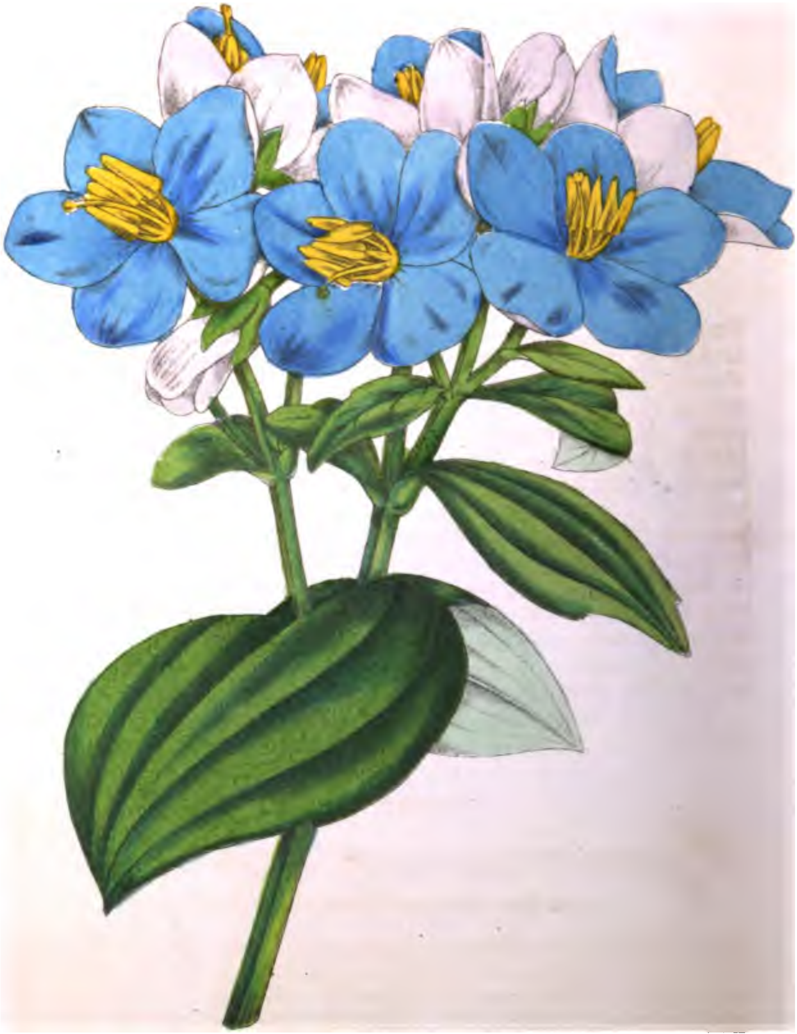


EXACUM ZEYLANICUM.

The Floricultural Cabinet.

JULY, 1856.

ILLUSTRATION.

EXACUM ZEYLANICUM. *Nat. Ord.* GENTIANEÆ.

THE interesting genus *Exacum* comprises about twenty species, natives of the high mountains of the tropical regions of Asia. *Exacum Zeylanicum* (selected for the illustration of our present number) is one of the handsomest of its tribe, being a free-growing plant, and very ornamental. The stem is erect, terminating in a branching, corymbose head of flowers, of a most lovely blue, and furnished with large yellow anthers. The leaves are sessile, elliptico-lanceolate, of a lively green. The plant is an annual, and first bloomed in the Botanic Gardens of Dublin, where it was raised from seeds received from Ceylon. It merits a place in every stove or warm greenhouse, being a plant of easy cultivation. Seed should be sown early in the spring, and the young plants potted off singly as soon as ready; the soil most adapted for their growth is of an open turfy nature; free drainage is essential, together with a liberal attention to watering.

Exacum is derived from *ex*, out of, and *ago*, to drive; it being considered by the natives an excellent antidote to many poisons.

NOTES ON THE BOTANY OF THE MONTH.

BY MR. EDWARD SHEPPARD, BURY.

IF the Editor of the *Cabinet* will allow me to occupy a small space in its pages, I propose to contribute a few remarks on the numerous wild gems which adorn our fields and meadows, too often, alas! neglected and unnoticed by those who take an interest in many plants of no greater pretension, brought perhaps from foreign shores to grace our parterres and flower-beds, to the neglect of the old friends of our native fields and woods. I do not, however, wish to discourage the cultivation of exotics, but to draw attention to the pretty flowers of our own isle, as well as to some of the old established favourites of our gardens, which, although not strictly British plants, may be almost regarded as such, from having been so long tended with assiduous care by our sires in times gone by

The month of July is, on the whole, the hottest period of the year; it is in this season that the landscape has a peculiar softness of colouring not to be seen at any other time, and the most beautiful and picturesque skies may be noted. Wild flowers are, indeed, now so plentiful that I know scarcely with which to begin. If we look around us, in the woods and on the banks, by pleasant waysides, in retired nooks and corners, more especially if resident in the northern counties, we shall see the handsome purple Foxglove, *Digitalis purpurea*, rearing its head; one of the tallest, most richly coloured, and noblest plants which our country produces. It is to be found more rarely in some one or two of the eastern counties, but abounds in the west and north. The scientific name alludes to a thimble, which the flowers resemble, and it is sometimes called "Fairy Fingers." I have frequently gazed with admiration on a patch of this plant, numbering some hundreds, and rearing aloft its tall spires, of a colour approaching very nearly to the Roman imperial purple. There is a variety, well known, with white flowers, and this is perhaps one of the greatest enliveners in borders or plantations of evergreens which can be placed amongst them; when planted in front of the common Laurel the effect is very pleasing. The Digitalis, which at present performs so essential a part in the Materia Medica, appears to have been unknown for its virtues to the ancient sons of Esculapius, and it is to English students of the healing art that the world is indebted for the discovery of the valuable medical properties of this pretty plant; the most remarkable effect which this medicine produces on the human frame is the diminution of the frequency of the pulsation of the heart, and consequently of the arteries. Our poets have frequent allusions to this plant. Cowley says—

> "The Foxglove on fair Flora's hand is worn,
> Lest while she gathers flowers she meet a thorn."

Brown describes Pan as seeking flowers of this plant to place on the hand of his mistress:—

> "To keep her slender fingers from the sun,
> Pan through the pastures oftentimes hath run,
> To pluck the speckled Foxgloves from their stem,
> And on those fingers neatly placed them."

One of the sweetest of our poets, the youthful and lamented Keats, alludes to the fondness of the bee for this flower, when he says—

> "Let me thy vigils keep,
> 'Mongst bowers pavilioned, where the deer's soft leap
> Startles the wild bee from the Foxglove bell."

The light down which covers the stalks induced the poets to make this plant an emblem of youth; but others, in allusion to the cap and bell form of the flowers, have made it the emblem of folly.

Two or three varieties of the pretty Willow-herbs, *Epilobium*, may now be found in full bloom; amongst which we may particularly mention the narrow-leaved variety, *E. angustifolium*, which is found on the banks of our rivers and ditches, growing from two to three feet high, bearing large pink flowers of five petals, each attended by a narrow leaf, and growing upon a long seed-vessel, which appears as a stalk to the flower, but afterwards splits up, scattering to the winds the seeds, which are provided with a tuft of soft down to facilitate their carriage, like miniature parachutes before the breeze. Another species is the broad, smooth-leaved Willow-herb, *E. montanum*, which, although not so tall a plant, aspires to grow on walls, the roofs of cottages, and shady banks. It may be readily distinguished from the former by its dwarfer habit, and smooth broad leaves. The flowers are rose-coloured, and the stems red. The Rosebay Willow-herb is a plant possessing such liveliness and elegance as to be seldom surpassed; yet it has been too generally rooted out of the parterre, without being admitted to more suitable situations. It is admirably adapted for shrubberies, whilst its rapid increase by its creeping roots renders it rather unfit for the quarters of choice plants, but these objectionable qualities in the flower garden are good qualifications for other situations. It is called Willow-herb from the resemblance which its leaves bear to the willow. *E. hirsutum*, with hairy leaves, is commonly denominated by the curious appellation, "Codlings and Cream."

I know of few plants more showy than the purple-crimson Loosestrife, *Lythrum salicaria*, a handsome, tall-growing plant, frequently found in ditches and watery places, growing from three to four feet high; it merits cultivation by all, though it is rarely seen but in cottage gardens. When a boy, I remember the beautiful effect which a long border of this plant presented in the garden of my grandfather, who was a passionate lover of flowers. I do not know anything so pretty as this flower for two or three of the summer months. The plants are crowded with blossoms of a clear purple-crimson, and borne in whorls of four or five together, with two leaves under each whorl. The stem is square and somewhat hairy; the leaves in pairs. It may easily be propagated by division of the roots.

In uncultivated sterile spots and by waysides, we may see the Mulleins, *Verbascum*, coming into flower. One, *V. thapsus*, the common variety, sometimes attains eight feet in height, and in this state has a very stately appearance, the tall stems being nearly covered from top to bottom with pretty flowers, large, and of a delicate yellow. The leaves resemble flannel in their texture, and are very downy, of a greyish green. It is called by country folks Shepherd's Club. There are others of this family now in bloom;

the Black Mullein, *V. nigrum*, and the White Mullein, *V. lychnitis;* the leaves of the latter have a very white appearance.

Climbing boldly on our hedgerows we may see the *Convolvulus sepium*, the Greater Bindweed, so named from its twining nature; perhaps we have not a native plant that displays a more beautiful corolla than this. On the wayside hedge it expands its handsome, monopetalous, trumpet-formed flowers in a dress which rivals the drifted snow for purity, and were it less common would create more general admiration.

"How fair her pendent wreath
O'er bush and brake is twining,
While meekly there beneath,
'Mid Fern and blossom'd Heath,
Her lovely sisters shining,
Tinged with such tender hues as streak
A slumbering infant's glowing cheek."

Who is there who has not also admired the common small Bindweed, *Convolvulus arvensis*, alluded to in the closing lines of the above couplet: a variety more humble in growth than the former, but a more formidable pest to the farmer; for the one confines itself to the hedgerow, whilst the latter travels the whole field over, entwining itself around the stalks of corn for support, or upholding itself by whatever comes in its way, not even refusing to embrace the nettle as a prop on which to display its simple beauties. Nature has endowed this native flower of our fields with an agreeable fragrance, and it possesses the means of protecting its organs of fructification from the rain and humidity of the night air by the help of folds in the cup, which constantly and regularly open with the rising sun, and close as the day decreases or on the approach of rain. The nectary of this little flower also displays the wise provision which has been made by nature to secure the saccharine juice, so necessary to the completion of the seed. The stigma of this flower is supported on arches over the bottom of the cup of the corolla, leaving only such small openings between the piers that form the arches, as to bid defiance to the plunder of the bee or insects of any considerable size. This species of Bindweed has a perennial root, of a milky white substance, which penetrates and ramifies so deeply into the earth as to render it very troublesome to eradicate or destroy. In trenching land we have frequently seen it at the depth of three feet from the surface. It is generally considered a good indication of gravel lying not far beneath. Miss Twamley says of this pretty pest—

"We merry flowers are running
The meadow mazes through,
And be the farmers e'er so cunning,
We are as cunning too;
Now up an ear of barley
We nimbly twist and twirl,
To deck its brown stem early
With a wreath of pink and pearl."

That old-established favourite of our gardens, *Convolvulus minor*, or *tricolor*, to my mind the nearest approach to heavenly blue in the tint of its beautiful blossoms, though allied to the above, is not a British plant; but few orders are more ornamental than that of the *Convolvulaceæ*, and several species have long tenanted our gardens; the present was introduced from Barbary so long back as 1629, for we find it mentioned at that time along with the *major* variety, being received through Italy and Spain from its native country. The latter, when employed to cover the trellis-work of arbours, verandahs, etc., displays the most beautiful shades of blue, violet, white, pink, and crimson; some delicately shaded and striped—

> "as stands the rainbow in the storm,
> Changing its hues with bright variety."

Another British plant, which has always pleased me, to be found mostly in streams of running water, along with water-cress and similar plants, is the Brooklime Speedwell, *Veronica beccabunga.* Its small dark blue flowers have a very pretty appearance, standing up above the deep green of its foliage, and many a sequestered streamlet is now covered with its neat little blossoms.

In our ponds and ditches at this time of the year we may frequently find the Flowering Rush, ***Butomus umbellatus;*** it is the only British plant which belongs to the ninth Linnæan Class, ***Enneandria.*** Surrounded by its narrow, upright, sword-like leaves, its umbels of five large pink flowers have a handsome appearance; it is indeed a fine plant, contrasting well with the yellow Iris and white Water Lilies, with which it dwells in the waters. When gathered it speedily droops, like all aquatics, for

> "the glow of her roseate charms has fled,
> When a few fleeting hours have passed o'er her head;
> For no more, 'mid the grass in the verdant mead,
> Do the tranquil waters her loveliness feed."

This is a plant which ought to be more generally cultivated than it is; it will grow by the sides of any piece of water, rivulet, or any place of copious moisture, where the roots may be mostly in water, particularly in any boggy or marshy part, where this and several other of the aquatic tribe may be introduced, and where they will flourish and render such places very ornamental. The Flowering Rush may be propagated either by division of the roots or by seed. The latter should be sown as soon as ripe in any boggy place, and left to nature; if roots are divided, it may be done at any time after flowering, and should be planted at once in the place allotted to them, where they will abide for years, and flower in a charming manner annually.

Two interesting little plants may be now met with in flower, in bogs and pools, ***Pinguicula vulgaris***, Common Butterwort, and ***Utricularia vulgaris***, Bladderwort. The first has pretty, violet-coloured flowers, with leaves at the base of the stalk, yellowish, and soft in texture; the latter with yellow flowers, the leaves curiously bladdered, divided, and floating: both are of neat-growing dwarf habit. There are some species of each more rarely to be met with.

Our fields are frequently at this time abundantly supplied with several varieties of the *Scabious* family; all are pretty. *S. arvensis* is the tallest, growing three feet high, bearing its leaves and branches opposite, each terminating with a close flat head of flowers, of a fine blue; the whole plant is hairy. Another species is the *S. succisa*, or Devil's Bit, found in great quantities in the southern part of the kingdom, on heaths, in woods, etc. The flowers are of a delicate pinky blue colour, the stem somewhat hairy, and the root appearing as if bitten off half-way, which has given rise to its vulgar name. Some foreign species are old inhabitants of our gardens. The Indian or Sweet Scabious has the additional attraction of a delicious perfume, and its flowers are of various hue, from pale purple to intense rich dark crimson, approaching to black, and of a velvety texture. A poet, before quoted, says justly—

> "Can regal purple with the Scabious vie?"

Our banks are now clothed with the several varieties of Lady's Bed-straw, *Galium*. There is the yellow variety, *G. verum*, having very abundant clusters of minute pale yellow flowers, and whose roots are used as a red dye for woollen cloth; the Great White Bed-straw, *G. mollugo*, of a more straggling habit, the flowers in little white tufts, and the stems very long; the Water Bed-straw, *G. palustre*, growing on the borders of ditches and ponds, the stems hairy, and the whole panicle of flowers much spread out; and the Crosswort Bed-straw, having yellow flowers, with four leaves together in a whorl.

On old walls we may find in some localities great quantities of that singularly neat and elegant little trailing plant, the Ivy-leaved Toadflax, *Linaria cymbalaria*. I have seen the walls of old mansions and ruins adorned with very large tufts of this plant; one locality where I have seen it growing in great abundance is by the water-side, on the old walls of the Archbishop's palace at Mortlake, in Surrey. Although it is doubtful whether this is a true indigenous plant in England, yet it appears to have become for a length of time naturalized, and our climate suits it well. It is easy of culture, and prolific of seed; no rockwork can be considered complete without it. The flowers are small, of the common Snapdragon form, pale lilac, with a touch of yellow on the lip; the stems are long and trailing; the leaves ivy-like, green above and purple beneath. It is often grown in pots, but does best when on rockwork or old walls; it is the neatest of all our trailing plants.

Another of this genus flowering the present month is the Yellow Toadflax, *L. vulgaris*, a fine, upright-growing, tall species, with smooth leaves, of a pale bluish green, and light yellow flowers. It decorates the banks of cornfields, pastures, and hedges; when in mass it is a very charming object.

Some of the genus *Pedicularis*, Red Rattle, may now be found in bloom. *P. palustris*, Tall Red Rattle, and *P. sylvatica*, the Marsh Rattle, are nearly similar, the latter being, however, of dwarfer habit; they are elegant plants, neither attaining quite a foot in height, and though of humble growth, are well worthy of our notice. The flowers are of a fine deep pink, and the leaves very handsome, being of a beautiful fresh green colour. The ripe seeds rattle in the seed-vessels, hence the name. They grow in meadows and pastures, preferring a rather moist soil. The common Yellow Rattle, *Rhinanthus cristagalli*, is a plant much resembling the above named, but belongs to a different genus. It is one of the few gaping-flowered plants of a yellow colour; it is met with in nearly every meadow, rattling its capsules of ripe seeds at our tread. The plant is quite smooth, rather more than a foot high, and very little branched. I have made very pretty vegetable skeletons of the calyces of this plant, and whilst on this subject I may be allowed to say that the calyces of several plants are admirable when properly prepared: such are those of *Hyoscyamus*, Henbane; all the *Campanulas; Nicandra; Datura stramonium; Physalis*, or Winter Cherry; the capsules of the Poppy; leaves of Box, Apple, Ivy, Holly, Magnolia, Tulip-tree, Poplar, Passion Flower, etc. To prepare them, place a *quantity* of the leaves, etc., in a flat shallow pan, and cover them with water; let them remain in this state, without changing the water, for six weeks or a couple of months, exposed to the sun and air—a few drops of muriatic acid assist the process. At the end of that period the vegetable matter will be sufficiently decomposed, most of it may be washed off, and any adhering removed by a few dabs with a soft-haired brush.

To bleach them, damp the preparations, and place them in a tight-fitting box, with a little brimstone burning in it; in an hour they will be very white. I dry them; and gum them on leaves of black paper, in a book, in which state they look extremely interesting. The more leaves put to soak at once, the better they will prepare.

On some of our old commons, at this season, we may find that curious parasite the Broom-rape, *Orobanche*, of which we have several varieties, each somewhat different, but all rather scarce. It has a singular appearance, and consists of a thick fleshy stem, very brittle, knobbed at the surface of the ground, and bearing all the way up tapering scales, brown coloured, and is destitute of leaves or branches; at top it bears a large coarse spike of gaping flowers, each having a small brown bract under it. It is a vegetable blood-sucker, unable to draw direct from the earth its nourishment, and therefore attaches itself to some other plant, upon whose vital juices it feeds. *O. major* fixes itself on the roots of broom or furze, and *O. minor* on the roots of clover. Their seeds are borne in myriads, but will not grow unless brought into contact with the roots of the respective plants on which they feed, but remain in the ground in such case for a very long time without damage, and if by any chance they reach the root of a furze-bush they strike into it and vegetate speedily, becoming a foot high in the space of a month.

Before I conclude this paper, and I fear I am now trespassing on your valuable space, allow me to notice one established favourite, a British plant, which is grown in every garden, and well known by all—I allude to the Wallflower, *Cheiranthus cheiri*, which may be made to bloom almost throughout the year, and loves to cling on the tops of old walls; it has been truly said

"Its blossoms rise where turrets fall,"

and it has been considered the emblem of love in adversity, never appearing on the noble pile whilst in its pride and grandeur, but so soon as it crumbles to decay, and the walls totter, then this fragrant flower glads the solitary place, and with its cheerful blossoms robs the scene of half its gloom.

"The Wallflower, the Wallflower,
How beautiful it blooms!
It gleams above the ruined tower,
Like sunlight over tombs,
And sheds a halo of repose
Around the wrecks of time."

ON THE CULTURE OF THE COCKSCOMB.

BY A SUCCESSFUL CULTIVATOR.

In the spring provide a quantity of turf from a pasture field, pared off about two inches thick, where the soil is a strong rich loam; form this into a pile three feet high, laying the grass side downwards, covering each layer of turf, one inch thick, with equal quantities of decayed hotbed manure, fresh droppings of horses, and swine's dung, clear from litter, and well incorporated. In autumn the pile is taken down, and the turf cut in pieces of two inches square, adding to three barrows of this turf one barrow of oak-leaf or vegetable mould, and one barrow of sharp sandy bog-earth, which are well mixed together, formed into a shallow ridge, and frequently turned. About the beginning of March, a hotbed should be got in readiness by being well worked and fermented. Then sow the seed very thin in forty-eight-sized pots, filled with a compost consisting of one-third rich loam, one-third leaf-mould, and one-sixth sharp sandy bog, broken fine; plunge the pots in the bed up to the rims, placing under each pot a piece of thin slate, to prevent any rancid steam from entering the bottom of the pots. As soon as the plants appear, they should have a little water given to them, raising the pots half-way out of the dung, and the next day entirely to the top, giving air, to keep the temperature of the frame to about 70°; the following day, remove into the pine stove for two or three days, to harden them previous to potting, placing them near the glass in the daytime, and lowering them down at night. Pot these plants in small-sized sixty pots, using the same sort of compost they were sown in. The bed should be well forked up, one foot deep, every four or five days, and watered with water of the same temperature as the heat in the frame, in order to keep the dung in a strong moist heat, the pots being constantly kept plunged up to the rims, until the plants attain their full growth. They require but little water, which is always given over the heads with a fine rose watering-pot. In the middle of the day, when the sun is out, close the lights for about a quarter of an hour, and thinly shade the plants; observing at all times to admit double the quantity of air for about a quarter of an hour previous to watering. The heads of the plants should be kept near the glass, and the temperature of the frame to 75°.

As soon as the plants have rooted sufficiently, and before the roots get matted together, put into full-sized sixty pots, using the same sort of compost as before; they are then allowed to remain in these pots until they have formed their heads, when the strongest plants and best-shaped combs are selected, and potted in forty-eight-sized pots, using for the *first time* the prepared compost of turf, etc. After the comb is formed, never allow the roots of the plants to get entwined, but when they are sufficiently rooted remove them into thirty-twos, and lastly into twenty-fours, where they complete their growth, and will retain their heads perfect for several months, by receiving a diminished quantity of water, and being removed into the greenhouse or conservatory.

ON THE TREATMENT OF CAPE HEATHS.

BY AMATOR FLORUM.

It has been said that this interesting tribe of plants is "perpetually green, perpetually in flower—of all colours, of all sizes, and of many and varied forms;" and I am of opinion, Mr. Editor, that few will be found to controvert the assertion, who have seen a good collection of this pretty genus. Perhaps a few detailed observations on a successful method of culture may prove useful, and may not be out of place, although much has already been written on the subject.

Heaths, or Ericas, may be readily propagated by cuttings, provided suitable care is taken to prevent their damping off after being put in. My opinion is that Ericas may be propagated at any season if the wood be rather firm, though on this head opinions are divided, some preferring the spring, others summer. To prick them off, pans should be provided of a proper size, say from six to eight inches deep; fill them with broken potsherds to within about two inches of the top, over which spread a thin layer of moss, chopped small, and next a thin layer of sandy peat, covered with about half an inch to an inch in depth of silver sand. It is necessary to observe that the layer of moss should be thin, as it often happens, where the contrary is the case, that the tender rootlets are broken and otherwise injured in removing the young plants from the pans; and this is a tribe of plants which will not bear injury to their young and tender fibres.

Having prepared the pans as above directed, water them with a very fine rose pot or syringe, so as not to disturb the sand, and make the cuttings whilst they are draining. Select such for cuttings, without reference to the season, as are about from one to two inches in length, separating the softer and more rapidly growing kinds from the hard-wooded varieties; with the former, a small portion of the old wood will prevent the cuttings from being so liable to damp off, as it is termed. We shall always find that Ericas, and other such delicate cuttings as are susceptible of over moisture, will do best when planted close to the sides of the pan. As soon as the cuttings are planted, give them a gentle watering with tepid water, and allow them to dry before placing on the bell-glasses. They may then be placed in the greenhouse near the glass, or in a similar situation in a cool part of the stove, and shaded from the direct sun. If placed in the stove, the glasses ought to be wiped and dried at least once a day, as the vapour is found to condense around the sides. When the young plants show signs of growth, give a little air for a short time in the morning, being mindful to cover and shade before the sun comes direct and strong upon them. In spring, as soon as the cuttings are rooted and ready for potting off, place each singly in the smallest sized pots; in autumn, six may be placed around the side of a 48-sized pot, drained well, and filled to near the surface with heath or peat soil, holding a large proportion of silver sand, mixing it up with small pieces of potsherds or charcoal, which act as a preventive to their suffering from the two extremes, drought and an excess of moisture; each of which it is very necessary to guard well against. When they are potted, put them in a frame under handlights, being particular to shade them for a few days, and gradually exposing them to air and light. As soon as they are found to require it, they should be shifted into larger sizes, adding a very small quantity of sandy loam to the compost named above. At the third shifting, each plant should be raised nearly an inch in the centre of the pot, so that the base of the stem at the crown of the roots be nearly on a level with the rim of the pot.

As to potting, it does not appear to be very material at what time it is performed. Ericas may be shifted with success from March to September, should they require it, and this ought to be the only criterion to fix the time, as nothing injures this tribe more than moving them into large pots, when the state of the roots shows they do not require it. They, like the majority of Cape plants, delight in a cool soil, somewhat moist, but not retentive of water. I believe it will be found that the best time for shifting Ericas is just before they show signs of blooming; there being at that time less risk of breaking or injuring the fibres, than when they are beginning to grow. Should any of the stock appear unhealthy, carefully reduce the ball of soil, and repot them in a size less, using a very sandy soil. They should never be over-potted at once, but the size gradually increased.

Draining is of first importance; without constant attention to this particular, all other care is thrown away. From one to three inches of broken potsherds should be placed at the bottom, being guided by the size of the pots, and a layer of moss next, so as to prevent the fine particles of the soil insinuating amongst and choking up the draining materials. In shifting large specimens, I generally place a small pot, surrounded by crocks, at the bottom, directly over the hole, which is a very effectual plan of keeping open the drainage; it also prevents worms and slugs from obtaining entrance. It is of importance to attend to the elevation of the top of the ball above the rim of the pot, which preserves the collar or portion of the stem in contact with the soil from the injurious influence of wet, and here it is that this tribe is most liable to suffer. When neatly done, the plants look the better for it. It is well to be careful, in potting, to avoid breaking the ball, and injuring any of the tender fibres or rootlets; a gentle shake will loosen the fibres from the old ball. If the plants do not require shifting into a larger size, it is well, and conducive to their health, to remove some of the old soil, adding fresh, and replacing them in a new, clean pot. I vary the soil somewhat, according to the constitution of some of the species: for such as *Hartnelli*, *Aitonia*, *Massonia*, *aristata*, and *elegans* I mix very sandy peat, with a small portion of light loam, and chopped moss, broken potsherds, etc.; for more robust kinds, equal parts of sandy peat and loam, with moss, etc., as before. I never sift the soil for Heaths, as I consider they do better without it.

Too much attention cannot be given to watering. I generally examine the plants every morning, and water only those which I find dry, afterwards I syringe the whole freely, and, should the weather be hot, it is repeated in the evening. It is well occasionally to examine the pots, in order to see that the drainage is open; should the water appear to stand on the surface, I perforate the ball in several places with a stout wire, which allows the water to enter the earth more freely. I do not know any class of plants so susceptible of injury from moisture or drought, it is therefore very necessary to keep the medium between these extremes. In summer, it is a good plan to fill up the spaces between the pots with moss; this prevents the plants drying in the pots, and saves considerable labour in watering; but it should not be allowed to remain later than the middle of September. In moist, dull weather I water as seldom as possible, even to those which are in flower:

In the middle of May I set out of doors all the robust, strong-growing kinds, which at the same time affords more space for those of more delicate habit. Those which I set out are placed on a good layer of cinders or gravel, and screened from the mid-day sun. The spaces between the pots are filled, like those in the house, with moss. Such as cannot command a house specially set apart for Heaths, should not thereby be discouraged from cultivating this beautiful and most interesting genus. A very good substitute for a Heath-house may be made with a deep frame or pit, and should be contrived as follows:—Allow three feet six inches for the back, giving a good inclination for the glass; the width and length depending on the number of plants intended to be grown: the floor should be well drained, so as to keep quite dry. At the beginning of May the frame should be elevated a few inches from the ground, to admit a free circulation of air among the plants, and each should be placed on an inverted pot, to bring them near the glass. Attend to frequent syringing, and keep the plants cool, by carefully shading them during the hottest part of the day, and they will thrive well. A coarse, thin canvas will answer as well as anything I know to shade with, as it admits a subdued light, and prevents the sun's rays having an injurious effect. Draw off the lights completely in sultry or very hot weather. About November lower the frame again, and neatly bank up the sides with dry turf; a covering of mats, with the addition of dry fern or straw in wintry, frosty weather, will serve as a sufficient protection.

It is a frequent error to suppose that this tribe is impatient of pruning, hence we often meet with tall and unsightly plants. I can assure your readers that this is not the case, as there are very few plants which will bear being shortened back better, or with greater impunity, if carefully done—this is more especially the case with the free-growing varieties. After being pruned they should be placed in an airy situation. Sometimes our Heaths are infested with the green fly, but by a timely application of tobacco-smoke this pest is kept down. Mildew is a more dangerous enemy; on its first appearance, remove the plant, and give it a sprinkle with flowers of sulphur, or syringe with lime-water, which is perhaps a better plan.

By pursuing this treatment Heaths may be grown in great perfection, and a more elegant and interesting genus I do not know.

A FEW REMARKS ON THE CULTURE OF MIGNONETTE IN BOXES.

BY M. L.

Mignonette is of the most simple and easy culture, but we seldom see it so managed as to look long neat and elegant; while although it is but a simple flower, it is really kept elegant for a length of time when treated in the following manner.

First with respect to box or window culture: I get some good compost, such as is usually prepared for vines; or a mixture of good cucumber and melon mould, or rich garden soil, is quite sufficient for the purpose. Instead of sowing the seed, I transplant in the boxes, either from the clumps or border, or from plants previously raised for that purpose, forming only one row along the middle of the box, at four to six inches apart from plant to plant, and pinching off the tops of each as soon as I plant them. If I plant large specimens, which I frequently do very successfully, I pinch all the shoots back to the first joint of each; and as they push fresh shoots, I continue to pinch them all back to the first joint of each shoot, till the box becomes nearly full, or till I think I shall soon require them to be in bloom, when I stop them no longer, and allow them to shoot out for flowering. Still I occasionally pinch them in so as to keep them in a judicious trim; and frequently thin out many branches, that they may not become too crowded, so as to weaken the plants or endanger the stems by damping off. By the above treatment I have had Mignonette, that has been planted early in the spring, kept in fine and vigorous bloom, at the outside of windows, till the end of January.

This season I sowed a good deal of this little favourite round the beds and borders, but owing to our cold, wet, clay soil, and the unfavourable season, in many parts it either never came up, or so weak that it dwindled off afterwards; but on some parts of the higher and drier grounds it came up tolerably well, which has given me plenty to transplant at this more favourable season into the less congenial soils, where it had gone off; and by my box treatment it is now promising to do well. Until it gets proper vigour, I keep picking out the blossom-buds as soon as I can detect them, or pinch back the shoots, to make them strong bushy plants. Those I leave after thinning I treat just in the same manner as the transplanted ones; so that one single plant only left becomes a much finer specimen than by leaving more. The usual manner of leaving it to ramble where it chooses, and all the plants which spring up from seed, is always disagreeable to the sight; and it soon exhausts itself by rambling seeds and blossom. Some plants are trained to a single stem, and tied to a stake; and these may be either trained to form into a bushy head at any convenient height, or spurred into the first joint, so as to have them in blossom the whole height of the stem, as far as it may be desired, in which state it is really a very pretty object.

ON THE MANAGEMENT OF PLANTS IN WINDOWS AND BALCONIES.

BY MR. JAMES THOMSON.

I AM a great admirer of flowers, and love to see them grown in every situation which is compatible with their cultivation. There are, I am persuaded, many who would cultivate them, and indeed be glad to avail themselves of such as will grow in windows or on a balcony, did they meet with better success than it is usual to find attends the endeavours of many window gardeners—those who are not in possession of even a few feet of garden ground. It is in the hope that the following remarks may be acceptable that I submit them to your readers' notice.

No plants are looked upon with more interest, or attended to with more care, than those which are cultivated in the rooms of dwelling-houses; and yet from imagining that there is something very difficult in the management of these plants, or from not properly understanding what that should be, our window gardeners often fail in accomplishing what their labours and anxiety most richly merit. Now there is in reality no great secret in the treatment of window plants, and we may learn this if we will only open our eyes to what is continually going on in the great garden of nature by which we are surrounded. Wherever plants are placed, whether in the open air, where they are watered by the dew and the gentle rain, in the conservatory or greenhouse, where they are subjected to more artificial treatment, or in the house window, where the treatment must necessarily be still more artificial, there are certain laws which regulate their growth, and certain conditions requisite in order to keep them in a high state of health and beauty. Thus, the greater part of greenhouse plants which are sufficiently hardy to endure the open air in the summer months, if planted in a sheltered border, attain in a short time twice their original size. This is no doubt owing in a great measure to the roots not being confined as they are in pots, but multiplying and ramifying in all directions in search of food, sending that food upwards into the stem, branches, and leaves, and so causing these parts to increase in size with great rapidity. This, then, is nature's method of cultivation, and the nearer we follow her example when we can, the more likely we are to succeed. Similar remarks apply to light and also to water, because both of these have much to do in the difference of the growth of the plants just mentioned.

Many plants indigenous to warmer countries will not live out of doors during winter in England, therefore we are obliged to have recourse to some artificial mode of protection, and of course that is the best mode in which we approach most nearly to natural circumstances. Hence the use of the conservatory where many of the plants are planted in the border, and where all receive as much light as an artificial structure can admit. We can never therefore expect to grow plants so well in rooms as in buildings of this description, particularly in the winter months, when the windows cannot be opened, or the plants with safety placed for any length of time on the outside. It must therefore be a general principle in their cultivation to give them all the light possible, by placing them close to the window, and in the summer months in a sheltered situation out of doors. Although this situation is the best for these plants in summer, yet in some places this may not be convenient, and in others it may be desirable to have them on the outside of the window, or on a balcony erected there for that purpose, where they will grow and flower under the eye, and, if sweet-scented, perfume the air of the room when the window is opened on a fine summer evening. In this case it is necessary to have some means of protection from the burning heat of the mid-day sun, which is very much increased by the reflection of the rays from the wall of the house. It should never be forgotten that the management all along has been very artificial, the leaves and shoots have been formed in a dark room, the roots are confined to pots and cannot find nourishment so quickly as it is drawn from the leaves, and therefore, if we have deprived the plant by artificial means of providing a certain quantity of food, we must also take care to counteract the other force —the sun upon the leaves—which if not done, more moisture will be drawn off than the roots can supply, and the result of this treatment will be, as is very often seen, plants with bare stems and withered leaves. Having mentioned what should be done, every one will readily invent something to answer the purpose, an awning, for example, or merely to move the plants to the inside of the window. Of course these remarks apply only to the summer season, when the sun's rays are very hot in the middle of the day, and to windows with a south aspect. High winds are very injurious to window plants and should be guarded against, and for this reason windows on the ground or first floor are best adapted for their cultivation.

I will now say a few words with respect to water. As I remarked before, plants planted by the hand of nature send their roots in all directions in search of food and moisture. They differ materially in this respect from those grown in greenhouses or rooms; confined to the pots in which they grow, and supplied with water by artificial means. The latter are more liable to suffer than the former from dryness in summer, having fewer mouths to absorb the moisture which is rapidly evaporating from the leaves; and they are also more likely to be injured by excess of wet in winter, owing to the drainage of the pots getting choked. It is impossible to say how often, and how much, water should be given, because this depends upon the kind of plant, the state of health in which it is, and the season of the year. As a general rule, however, they should never be watered until the soil at the surface of the pot will readily crumble between the finger and thumb when taken up, and when in this state, as much water should be given as the soil will receive; in other words, never water until the plants are dry, and when you do water give plenty of it. Rain-water is by far the best kind, and should always be used in preference to that obtained from springs. In winter very little water is required, and it should always be cautiously given, because the air is more moist, and the light is not so intense, therefore there is less demand made upon the roots by the leaves.

When the plants are in the inside of the room, it is well to have some contrivance to prevent the water from running through the soil and wetting the floor, and this is most simply done by placing a flat pan under the flower-pot, which collects any superfluous water, and this water is afterwards absorbed by the roots when the soil gets dry. The method very often practised, of always keeping these pans full of water in preference to watering from the top, is not to be recommended, except for very robust plants, which are not easily injured, and not even for these in the winter months. Watering over the leaves is of the utmost importance to the health of window plants, exposed as they are to so many small particles of dust, which forms a thin crust over them, and prevents the natural action of their pores. This operation can be performed very seldom in winter, but should be done every day in summer by the lady who is anxious to preserve her plants in health and eauty. The proper time for shifting and potting plants of this description is either in spring or early in autumn.

ON THE CULTIVATION OF STEPHANOTIS FLORIBUNDUS.

BY A THREE YEARS' SUBSCRIBER.

Having been a very successful grower of this charming plant, perhaps a few hints on its proper management may not be unacceptable to the readers of your highly useful periodical.

I may commence by stating that I usually grow the *Stephanotis* in pots, in preference to planting it out in the stove border; and I am persuaded there is no stove plant more easy of culture when its requirements are known. I find the following compost to answer well:—Two parts turfy loam and two parts sandy peat, with one part well-rotted dung, or well-decayed hotbed manure, and one part of well-decayed leaf-mould. When plants are potted add pieces of broken charcoal as big as nuts, and well mix up the whole. This compost will be found very open, and will allow the roots to run freely into it; if one of a closer nature be used, we shall find that, although the plants may grow tolerably well for a time, yet they will be very shy in flowering, and in consequence of such soil retaining too much moisture and not draining freely, the plants will be apt to rot and damp off; and again, if kept too dry, the compost is too hard, and as the roots are unable to penetrate it, the plants will become unhealthy, and finally perish. A soil which is light, open, and rich is the one most suitable for this plant.

In propagating by cuttings I choose such as are short, trim away the lower leaves, and insert them in sand round the side of a pot, cover with a hand-glass, and place in a warm corner of the stove or bark bed. When the roots are formed, which generally takes place in a very short time, I pot them off in rather large-sized pots of the above-named compost, replace the hand-glass, and shade them from the direct sun for a week or ten days, when the young plants may be fully exposed. The soil, being open in its nature, may be well pressed down, allowing plenty of draining materials, and a liberal supply of water afforded without fear of injury to the roots. Plants thrive remarkably in a bark bed, the pots being plunged up to the rim; but if no such convenience be at hand, they will prosper well in any warm corner of the stove, where the roots may be kept dry and warm. The heat of the house should not exceed 50° in winter, unless in sunny weather, when a few degrees more are allowable. As winter declines, the heat may be kept at 60° or 65°, when the plants will put forth their short thick shoots and healthy leaves; in a month after the growth has fairly commenced, and flowers begin to show themselves, let the heat rise to 70°, at which it may be permanently kept, and the plants will make fine shoots, with a great show of flower-buds, which will soon bloom to perfection. As soon as the plants have done flowering, I allow the heat to go down, and the plants to rest through their dormant season. I am assured that if my plan of treatment be pursued by any who have experienced a difficulty in flowering this charming climber, they will find it attended with full success; and I have, I regret to say, known several cases where, through not properly treating it, disappointment has been the result. I have had as many as sixty-five heads of flowers on one plant at a time, and nothing can look more agreeable, each head of bloom containing seven or eight large-sized flowers, of pure snow-white, contrasting well with the dark green of its healthy leaves. *Stephanotus floribundus* is a native of the island of Madagascar, and was introduced to our nurseries about sixteen years ago; it is decidedly the best thing of its class that has been yet introduced, and I shall be happy if these few remarks may be of use to the readers of the *Cabinet*.

ON THE TREE CARNATION.

BY MR. WILLIAM BREE.

All lovers of a handsome fragrant flower must be enamoured of this beautiful plant, which has only of late years been introduced to our notice. I know of few plants more showy, or which are of easier cultivation. Possessing a small stock, we may enjoy their cheering blossoms as well at Christmas as in the heats of summer. Without respect to season, these plants have a habit of blooming upon the young ripened stems, and will bear stopping as often as is rendered necessary to retard their blooming period, without injury to their ultimate show of flowers. A little practical experience will be of advantage in instructing the grower to omit stopping, that they may bloom at the period desired. Having procured a selection of plants, they may be readily propagated by cuttings, which should be dressed in the usual manner, taking them off at a joint where the substance of the wood is firm, yet not hardened. Have ready some pots provided with a good drainage of crocks, and using a light sandy soil, put in the cuttings and cover them with bell-glasses. Plunge the pots up to the rims in a mild bottom heat, about 60° is the best temperature; here they will speedily root well, if attention be paid to watering. The inside of the glasses should be wiped once a day, to preserve them from the injurious effects of damp, which would otherwise prove very fatal to them. As the young plants become rooted, pot them off into large forty-eight-sized pots, when they should be kept in a frame until quite established, at a temperature of about 50° to 60°. As they make a little growth it is well to pinch out the tops of the leading shoots, to induce them to become bushy and throw out laterals. When the roots fill the pots, shift them into thirty-two-sized ones, if it is intended to have them bloom in autumn; for winter and spring flowering, pots a size larger may be employed. Throughout the summer retain them in a cool frame, giving due attention to stopping, watering, and tying up. As to stopping them, we may remark that if they are desired to bloom about Christmas, they ought not to be stopped later than the middle of August, and in all cases it is desirable to defer it until the present growth be properly matured. A free exposure to air and light is advantageous during the growing period; after the buds are formed, however, they may be kept more close, and the temperature raised, depending on the time at which they are desired to bloom, in which case a little practical experience is of more value than pages of directions. When cold and damp weather comes on, remove the plants to a greenhouse or pit, in order to give them an increase of heat, which, however, will not be necessary unless they have had a late stopping, for they will flower well at a temperature between 40° and 50°. It is advisable to have the growth matured in autumn, and to keep the plants in an airy cool part of the house until their flowering-time approaches, rather than to rely upon the use of artificial temperature, which ought properly to be reserved to those plants destined to bloom in spring. There is no plant more acceptable in the drawing-room or conservatory, at a time when few other beautiful blossoms are to be had. For compost, a mixture of well-decomposed manure and rich loam, with a little sharp river sand, will be found to grow them to perfection. The old plants after flowering may be cut back, kept in a cool pit, and grown for flowering at another season.

DESIGN FOR A SMALL ESTATE COMPRISING ABOUT SIXTEEN ACRES.

(Reference to Plan.)

BY T. RUTGER, ESQ.

THE plan contains about sixteen acres, and is divided into pasture and pleasure ground by a light iron or invisible fence, taking in the lawn as pasture also, on the south-west side of the water. The walk round the extremity may also be protected by a fence of the same description. At the south-west, nearly opposite the house, is a round summer-house, and at the south of the kitchen garden is an alcove; there are also two ornamental erections at the extremity of the grounds, one to the south-west, and the other to the south-east. The house has a wing for the offices, from whence convenient walks lead to the laundry, poultry-court, stable-yards, garden, etc. The rivulet, which enters at the south-east, has a branch carried on to the homestead; the other branch, on entering the lawn, is widened, and diminishing on entering the kitchen garden; it is supposed to be conveyed thence under ground, and to supply tanks for the garden and forcing departments, and from there to the basin in the stable-yard, as well as to be made available for the brewhouse, where it is supposed to be led off by a drain. The pasture ground is laid down as somewhat undulating, and considerably elevated at the southern extremity.

Reference to the plan.—1, Lodge; 2, ditto, for gardener's house; 3, laundry and yard; 4, brewhouse and yard; 5, poultry-court; 6, stables and yard, with a basin; 7, dung-yard and compost-ground, with shed; 8, melon-ground with sheds; 9, forcing department, having two ranges of forcing-houses; 10, kitchen garden; 11, greenhouse or conservatory and flower garden, with a space behind for greenhouse plants to be set out in summer; 12, road to the homestead; 13, homestead and rick-yard, the erections to be appropriated as they may be wanted. The whole supposed to be hidden from view by trees or a shrubbery.

REMARKS ON THE RICHARDIA AFRICANA.

BY MR. PETER MACKENZIE, WEST PLEAN, STIRLING.

MANY short notices respecting the culture of the *Calla Æthiopica* of Linnæus, or *Richardia Africana* of modern botanists, have appeared from time to time since its introduction to this country; many who grow it as a window plant, or in the greenhouse, will be none the worse to hear some of the instructions regarding its culture repeated, that they may, if they choose, have better plants with larger flowers, and more of them than they generally have, for their favourite water plant will repay them with luxuriance and beauty for the little extra trouble bestowed upon it.

This plant, although introduced from the Cape of Good Hope more than a hundred years ago, has a variety of names, as if it came from another quarter of the globe. Mr. Lawson, in his treatise on "The Royal Water Lily of South America, and the Water Lilies of our own Land," says that the Nelumbium, or Rose of the Nile, must not be confounded by the non-botanical reader with a very different plant, often cultivated in our greenhouses under the names of Lily of the Nile and Ethiopian Lily; the *Richardia Africana* has no structural affinity with any of the other plants known as Lilies and Water Lilies. It belongs to the natural order *Araceæ*, the Arum family, being associated with the Cuckoo-pint or Wake Robin of our woods (from the root of which plant Portland sago is prepared), the Tongue-swelling Dumb-cane, and the *Acorus calamus*, or Sweet Flag. The Richardia is easily cultivated, either in the greenhouse or in the dwelling-house window, a plentiful supply of water being all that is necessary to ensure its success. It has been observed that when the plant has too much water given, it will distil away in drops from the tapering points of the leaves perfectly limpid, and of an acrid taste. It requires to be grown in a rather large pot, so that its roots may have plenty of room, and, where it can be done, the plant will grow all the better if the pot is plunged into a tub or cistern of water.

The Ethiopian Lily grows well throughout the summer season in the open-air pond, and, where entirely covered with a depth of water sufficient to place its roots beyond the reach of frosts, is said to stand over the winter, and thrive well as a permanent out-of-door aquatic. Its arrow-shaped upright leaves, elevated above the water on long stalks, and the large pure white spathe which it produces, render the Richardia an object of great beauty, and point it out as a fitting companion on the lake, but more especially on the artificial pond, for the great White Water-Lily of our own land.

As a greenhouse plant, it flowers in the winter and spring months.

For some time I have been trying experiments with this plant, in the way of feeding it, in order to increase the size of the leaves and flowers. I find that guano is a good manure, either applied to the surface of the soil, and brought in contact with the roots of the plant by means of watering, or by applying water with guano dissolved in it. The flowers have been much larger than ever I have seen them before, the whole are in a healthy condition, and the flowering of the plant is continued much longer than when common water is applied to it. The following remarks by Mr. Mearns, in the *Gardeners' Chronicle*, may be useful to some of your readers. "It requires very nearly the same treatment as the *Iris Chinensis*, namely, shaking it frequently out of the exhausted soil, and divesting it of every appearance of suckers, trimming in the roots, and repotting it, but not to excess. It it best to replace them in the same pot, unless it be obvious that more room would increase their luxuriance. With rich compost, they will be strong and healthy by the regular flowering season, and will send up strong stems, blooming in a continued succession nearly throughout the winter. I find that, like all tuberous and bulbous-rooted plants, they do better when suffered to remain in the pot for a time in a dormant state, after they have done flowering, keeping them only slightly moist. They should afterwards be shaken out of the soil, the roots and suckers trimmed from the tubers, and treated as before. Although winter is the flowering season, I have had them blooming in a continued succession through the summer months, in the stove. They soon get vigorous roots, and send up another, and often three or four flowering stems. If the tuber is strong they will flower well in the open ground in summer, and produce a fine effect, although their most natural season, like the Chinese Iris, is in the winter months, when their elegance and pleasing fragrance are most wanted."

GRAND FLORAL EXHIBITION, CRYSTAL PALACE.

On Saturday, May 24th, the first grand Floral Fête of the season took place at the Crystal Palace, and we believe it may be regarded as a very successful one. The morning of the day fixed for the exhibition turned out very unpromising, but as the day wore on the sun came out, and there was a large attendance of the lovers of flowers from all parts of the kingdom. The total number of visitors amounted to 17,237, of whom 2735 paid half a guinea for admission. The excellent arrangements and encouragement offered to exhibitors by the spirited directors of the Crystal Palace Company cannot indeed fail to command floral exhibitions of hitherto unlooked-for magnificence. Prizes were adjudged to the value of £650 for flowers and plants, and £138 for fruits, etc.

We noticed a great improvement over former shows in the arrangement of the plants, which, instead of being on tables and stands dispersed through a considerable extent of the building, were placed together along the central transept and nave, forming a grand and imposing whole. Above was stretched a light covering of canvas, which served as a screen to protect the objects collected together from the injurious effects of the direct rays of the sun. We will endeavour to convey to our readers an idea of the arrangement of the groups and tables as effected at this exhibition.

Entering the great transept from the Sydenham road, there stood before us, situated between the large statue of Peace on the left hand, and the Scutari obelisk on the right, an array of tables set in the form of a cross, the long arms of which were each twenty-two yards in length, and the shorter twelve. On these were well displayed a good collection of stove and greenhouse plants, Azaleas, etc.; turning to the left and passing down the eastern nave, were Orchids and some new plants, while the extremity in this direction consisted of a stage, twenty yards in length, of Tulips; on the other side we passed Cape Heaths, Rhododendrons, and Cacti; we then again came to the transept, and entering the western nave, we found in succession new Azaleas, Calceolarias, Fuchsias, miscellaneous plants, and a long stand of fruits, which was at the extremity in this direction; turning the end and coming again towards the transept, we beheld the Roses and Pelargoniums in fine display, both show flowers and fancies.

Of stove and greenhouse plants there were many fine specimens. Mr. James May, gardener to H. Collyer, Esq., of Dartford, obtained the first prize for a large group consisting of Azaleas, Epacrises, a fine specimen of *Pimelia spectabilis*, *Dipladenia crassinoda*, and *Stephanotis floribunda*, Cape Heaths, *Aphelexis macrantha purpurea*, Chorozemas, and *Gompholobium polymorphum*, covered with flowers. Another collection worthy of particular notice was exhibited by Mr. Dodd, gardener to Sir John Cathcart, Bart. It included finely grown examples of *Erica Cavendishi*, *Gompholobium polymorphum*, *Pimelia spectabilis*, *Epacris miniata*, *Boronia serrulata*, *B. pinnata*, *Azalea Gledstanesii*, and other plants. Messrs. Veitch and Son contributed a collection which attracted great notice, being specimens of plants possessing fine foliage and noble habit, well arranged for effect. A fine Dracæna occupied the centre of the group, and on either side was the handsome Palm, *Chamærops humilis*. There were also good specimens of *Cycas revoluta*, *Aralia pulchra*, *Dammara obtusa*, several tree Ferns, with well-grown plants of the handsome silver-striped *Pandanus argenteus variegatus*, and a few Orchids. Another group exhibited by the same well-known firm consisted of Orchids, and comprised some extraordinary specimens, amongst which we noticed *Cattleya Mossiæ*, covered with blossoms, *C. intermedia*, *Calanthe veratrifolia* (a large and well-grown example), two beautiful plants of *Phalænopsis amabilis*, *Lælia cinnabarina*, loaded with its handsome orange-scarlet flowers, *Dendrobium Farmeri*, some Cypripediums, and other plants all equally well grown. In addition to he above, Messrs. Veitch showed a collection of variegated Orchids, including several species of Anectochilus and Physurus. Mr. Gedney, gardener to Mrs. Ellis, Hoddesdon, exhibited also a collection of twenty well-grown Orchids, the most conspicuous and beautiful being *Cattleya Mossiæ*, *Dendrobium densiflorum*, the snowy-white Calanthe, *Phaius Wallichi*, and *Lycaste Skinneri*, all in profuse bloom. Another fine group was from Mr. Mylam, gardener to George Reed, Esq., Burnham. In this the most conspicuous objects were *Vanda teres* and the sweet-scented *V. suavis*, *Dendrobium densiflorum*, *Lælia purpurata* (a very handsome species), *Epidendrum alatum*, *Barkeria spectabilis*, and *Cattleya Mossiæ*, a fine specimen above three feet in height, loaded with bloom. Mr. Green, gardener to Sir E. Antrobus, Bart.; Mr. Wooley, gardener to H. B. Ker, Esq., Cheshunt; Mr. Carson, gardener to W. Farmer, Esq., Nonsuch Park, Surrey; and Mr. Keele, gardener to Dr. Butler, Woolwich, were other exhibitors of well-grown specimens of this fascinating tribe of plants.

The display of Azaleas was very striking, and was a main feature of the exhibition. Mr. Green, gardener to Sir E. Antrobus, Bart., of Cheam, exhibited twelve good old sorts, in full bloom, leaving scarcely a leaf visible; amongst them were *Gledstanesii*, *Iveryana* (white striped with pink), *rosea punctata*, *coronata*, *variegata*, *triumphans*, and *Perryana*. Mr. Gaines, nurseryman, of Battersea, showed twelve well-grown specimens also. Of amateur exhibitors in this class we must not omit to notice Mr. Carson, gardener to W. Farmer, Esq.; in his collection were splendid plants of *variegata*, *laterita*, and *Broughtoni*, the old Chinese yellow. Messrs. Ivery, nurserymen, Dorking, exhibited in the class of new kinds, *crispiflora*, a very pretty variety, the border crimped; Beauty of Europe, white, spotted with salmon-blush; Lord Raglan, a large flower; General Williams, fine rosy salmon; Admiration, pink stripes on a clear white ground; and Trotteriana, a vivid rosy crimson. Mr. Roser, gardener to J. Bradbury, Esq., of Streatham, showed *delicatissima*, white, with carmine stripes; and Marie, a fine orange-red variety.

Of Roses there was a fine show. Amongst the trade-growers, Messrs. Lane and Son, of Berkhampstead, took the lead, and obtained the first prize; their collection was very fine, and in beautiful bloom. We noticed particularly Baronne Prevost, Duchess of Sutherland, Souvenir d'un Ami, Lamarque, and Lion des Combats. Messrs. Paul, of Cheshunt, had some well-grown specimens, including Vicomtesse Decazes, beautiful yellow; Géant des Batailles, Paul Récaut, and some others. Mr. Francis, nurseryman, Hertford, also showed twelve, amongst which were Elise Sauvage, Lamarque, and Coupe d'Hébé. Mr. Bushy, gardener to J. Crawley, Esq., Stockwood Park, Luton, amongst amateurs, had the best plants, including General Jacqueminot (a fine dark flower), Chênedolé, Madeline, William Jesse, and Paul Perras. Mr. Wilkinson, nurseryman, of Ealing, exhibited a collection of cut flowers of choice kinds. Amongst new Roses we cannot omit to mention Bacchus, a new hybrid perpetual variety, from Messrs. Paul, which promises to be an acquisition; it is of good form, and a fine deep crimson.

Amongst new plants we noticed *Embothrinum coccineum*, a half-hardy shrub, having pretty scarlet flowers; *Corræa cardinalis*, flowers bright scarlet; *Ceanothus Oregonus*, a hardy bushy species, with white flowers, from Messrs. Veitch and Son. Messrs. Standish and Noble forwarded an Azalea, a crossed variety, with singular flowers, having a double corolla, one within another.. From Mr. Epps, of Maidstone, there was *Begonia splendida*, a new species from Java, with strikingly handsome red leaves; also a specimen of *Hedaroma tulipiferum*, a greenhouse shrub, with pretty bell-shaped flowers, brown and white. Mr. Fleming, gardener to the Duke of Sutherland, exhibited some lovely bunches of *Cantua dependens*, bloomed in the conservatory.

The show of Pelargoniums was very fine. Mr. Turner, of Slough, obtained the first prize for show flowers, and also for fancy varieties; his specimens were remarkably well grown. Among them we noticed Una, Wonderful, Governor-General, Lucy, Sanspareil, Majestic, Basilisk, Arethusa, Petruchio, Carlos, National, and Magnificent. Messrs. Dobson, Isleworth, obtained the second prize for Arethusa, Boquet, Harriet, Rosamond, Delicatum, Lucy, Gertrude, Conqueror, Ambassador, and some others. Messrs. N. Gaines, and

J. and J. Frazer, also had good collections. Of amateur exhibitors, Mr. Nye, gardener to E. Foster, Esq., Clewer, showed the best specimens. In fancy Pelargoniums, Mr. Turner contributed Madame Sontag, Empress of France, Celestial, Mary Howitt, Jenny Lind (a very fine specimen), Electra, Queen of Roses, Richard Cobden, Cloth of Silver, Conspicuum, Delicatum, and Lady Hume Campbell. Messrs. Fraser, of Lea Bridge, exhibited Gaiety, Floribundum, Celestial, Madame Sontag, Advancer, Delicatum, Princess Alice Maud, Formosissimum, Princess Galitizin, Jenny Lind, Miss Sheppard, and Argus. In the amateurs' class, Mr. Windsor, gardener to A. Blyth, Esq., of Hampstead, showed Duchesse d'Aumale, Electra, Magnificum, Fairy Queen, and Princess Alice, very fine specimens, well bloomed. Mr. Bousie, gardener to the Right Hon. H. Labouchere, M.P., Stoke Park, brought excellent specimens of Perfection, Delicatum, Princess Galitzin, Formosissimum, Richard Cobden, and Triumphant.

Messrs. Lane exhibited a fine collection of Rhododendrous, comprising chiefly yellow varieties, amongst which were *Sabinianum, sulphureum, aureum, primulinum elegans*, and *decorum majus*. Messrs. Veitch had a pretty variety, to which a first prize was awarded, named *Caucasicum pictum;* and Mr. Gaines sent a very good collection.

Of Gloxinias there were three collections. Mr. Dall, of Pimlico, had two varieties, named *erecta stellata* and *Castelloni erecta*, which were very well worth notice.

Amongst a good display of Fuchsias we noted a collection of six, from Mr. Bousie, gardener to the Right Hon. H. Labouchere, M.P., which were pyramidal specimens of great height; one, Macbeth, was upwards of ten feet high, the lower shoots flowering down below the pot, and all covered with flowers from top to bottom. Mr. Rhodes, gardener to J. Philpott, Esq., Stamford Hill, also exhibited half a dozen well-grown plants.

Mr. Turner had a choice collection of Cinerarias, comprising Admiral Dundas, Viola, Orlando, Purple Standard, Emperor of the French, Etoile de Vaise, Sir C. Napier, Duchess of Wellington, Lady Paxton, Magnum Bonum, Brilliant (a fine light blue-edged kind), and Optima.

From Messrs. Dobson and Son were exhibited twelve extra good Pansies, in pots, namely, Omar Pacha Great Western, Aurora, Queen Victoria, Father Gavazzi, Marian, Mary Taylor, Nonpareil, Emperor, Satisfaction, Constance, and Topaz. There was also a collection of cut flowers exhibited.

A very interesting collection of Nepenthes, or Pitcher Plants, were brought by Messrs. Veitch, amongst which the following were very striking: *Phyllamphora* (a specimen completely loaded with delicate pitchers), *ampullacea, vittata, lanata*, and *levis*. A small collection of the taller-growing species of Cacti was shown by Mr. Green, gardener to Sir E. Antrobus, of Cheam, and a like number from Mr. Grix, of the same place.

The exhibition of Tulips was very extensive, comprising five rows, each twenty yards long, which attracted very great attention.

With respect to the Crystal Palace plants, we were glad to find them in a very healthy and flourishing condition; many of those suspended in wire baskets were coming into full bloom, and looked remarkably well. In the basin, the Nymphæas and other aquatics were in perfection, and flourish as well as could be desired: we noted *Devoniensis*, rosy crimson; *cærulea*, light blue, with bright green foliage; and *dentata*, white, with yellow centre. The *Victoria Regia* is small, but very healthy. At each corner of the basin there is a fine specimen of the Norfolk Island Pine, and four very large *Dielytra spectabilis*. Some fine standard Rhododendrons in tubs were in full bloom, as were also some in beds. Oranges, Bays, and Pomegranates were doing well in boxes.

Out of doors, the beds of early Tulips were past their best bloom, but had been fine when in perfection. The bedding plants were nearly all put in, and the grounds well kept.

ROYAL BOTANIC SOCIETY'S EXHIBITION, REGENT'S PARK.

The first exhibition of this season took place on the 28th May. The attendance of visitors was not so numerous as could be desired, which fact is, however, accounted for by the heavy showers which came on during the course of the afternoon. The show itself was a very good one; many of the plants were transferred to this exhibition from the Crystal Palace, as the two shows were fixed so nearly together. Of stove and greenhouse plants there was a good display, also of Roses, Azaleas, Heaths, and Pelargoniums. The orchids were generally fine specimens, but fewer in number than at the Crystal Palace. Amongst the new plants some were well worthy of notice. From the Bishop of Winchester was a very handsome orchid, a *Peristeria*. Mr. Linden, of Brussels, forwarded *Odontoglossum Phalænopsis*, lately received from New Granada; and Mr. Wheeler, of Uxbridge, an interesting *Epidendrum*. Messrs. Veitch and Son exhibited the new *Leptodactylon*, from California, *Tropæolum Shumannianum*, and *Eurybia alpina*, a hardy shrub from New Zealand, having white flowers, almost resembling an Aster. From Messrs. Standish and Noble, of Bagshot Nurseries, was a cut specimen of *Spiræa grandiflora*. There were also several Sikkim Rhododendrons, including a nice plant of *R. Dalhousiæ*, with nine flowers, large, of a greenish white, and *R. cinnabarinum*, with orange-yellow blossoms. Messrs. Henderson contributed a pretty collection of Gastrolobiums. Mr. Barnes, of

Bicton, sent some specimens of the catkins and cones of ***Araucaria imbricata***, and Mr. West, of Lymington, cut specimens of ***Bougainvillea spectabilis***, a plant not new, but by no means common in bloom. Mr. Francis, of Hertford, brought a fine collection of Roses on Manetti stocks, as well grown as any we have had the pleasure to see; every plant had bloomed, though only one year from the bud. A striking group of Amaryllises was very attractive, grown and exhibited by Mr. Hamp. The Society's grounds are well kept, and reflect credit on the able curator.

RULES FOR THE PRONUNCIATION OF BOTANICAL NAMES.

BY THE REV. W. GREEN.

THE sounds of the accented vowels used in the names of plants are distinguished by the mark placed over each; the short sound by an acute ('), as Máry, and the long by a grave accent (\`), as Màrtha. The following remarks will show when the vowel is to be sounded short or long.

Every accented penultimate vowel is pronounced long, when followed by a vowel or a single consonant, *A*chillè*a* tomentòsa; but it is shortened when followed by two consonants or a double one, as *S*órbus, *T*áxus; except when the first consonant is a mute and the second a liquid, as A'brus.

VOWELS.

Every accented antepenultimate vowel, except *u*, is pronounced short, as *H*elléborus, *H*ùmulus; but when succeeded by a single consonant, followed by *e* or *i* and another vowel, they are lengthened, as Stellària; except *i*, which is short, as *T*ília.

A unaccented, ending a word, is pronounced like the interjection *ah*, as Stícta (*ah*).

E final, with or without a consonant preceding, always forms a distinct syllable, as Silènë, *A*'loë; also when the vowel is followed by a final consonant, as Tri-chó-ma-nes, not Tri-cho-manes.

I unaccented, if final, sounds as if writen *eye*, as Spìca vénti (*eye*); but when it ends a syllable not final, it has the sound of *e*, as ***Més***pilus (***Mespelus***), Smíth*ii* (*Smíthë-eye*).

Y is subject to the same rules as *i*.

The diphthongs *æ* and *œ* conform to the rules for *e*; *ei* is generally pronounced like *eye*; the other diphthongs have the common English sounds.

CONSONANTS.

The following *directions regarding consonants* and their combina-ns, though unnecessary to those skilled in our own tongue, may be without their use to some of our readers:—

C and *g* are hard before *a*, *o*, *u*, as *C*órnus, *G*àlium; soft before *e*, *i*, and *y*, as Cetrària, *C*ìtrus.

T, *s*, and *c*, before *ia*, *ie*, *ii*, *io*, *iu*, and *eu*, preceded by the accent, change their sounds, *t* and *c*, into *sh*, as Blèt*ia*, *V*ícia; and *s* into *zh*, as Blàs*ia*; but when the accent is on the first diphthongal vowel, the preceding consonant preserves its sound, as aurantíacum.

Ch, before a vowel, are pronounced like *k*, as *C*helidònium (*kel*), *C*ólchicum (*kolkekum*); but, in commemorative names, they follow their primitives, as Richardsòn*ia*, in which the *ch* is soft.

Cm, *cn*, *ct*, *gn*, *mn*, *tm*, *ps*, *pt*, and other uncombinable consonants are pronounced with the first letter mute, as *P*tèris (*teris*), *C*nìcus (*nikus*), Gmelìna (*melina*), Gnídia (*nidia*), etc.

Ph, followed by a mute, are not sounded; but, followed by a vowel or a liquid, sound like *f*, as *P*hlèum (*fleum*).

Sch sound like *sk*, as *S*chœ̀nus (*skenus*); in *tm* and *zm* both letters are heard.

S, at the end of a word, has its pure hissing sound, as *D*âctylis; except when preceded by *e*, *r*, or *n*, when it sounds like *z*, as *R*ìbes (*ez*).

X, at the beginning of a word, sounds like *z*, as Xánthium; in any other situation it retains its own sound, as *T*áxus, *T*ámarix.

NOTES ON NEW AND SELECT PLANTS.

117. Aristolochia Thwaitesii. Nat. Ord. *Aristolochiaceæ.*—A remarkable and very distinct species, introduced to the Royal Gardens at Kew, from the interior of Ceylon, whence seeds were sent by Mr. Thwaites. It bloomed for the first time early in March this year. The flowers are produced on stems of about three inches long, rising from the crown of the root, which bear a raceme of fragrant blossoms; only one opens at a time. The foot-stalks bearing the flowers are rather long, allowing the blossoms to rest on the ground. The perianth is a long tube, curiously formed, twice bent, like a swan's neck, and contracted in the middle; of a pale sea-green, slightly veined with yellow. The limb is yellowish, covered with glandular hairs; the throat is deep purple-crimson, and the mouth about an inch across. The leaves are lanceolate, four or five inches long, and borne alternately, on stems near a foot high.—(*Bot. Mag.*, 4918.)

118. Odontoglossum hastilabium; *var.* fuscatum. Nat. Ord. *Orchideæ.*—Messrs. Jackson and Son, of Kingston Nurseries, sent specimens to Kew, in March, 1856. It was discovered in Venezuela, by Mr. Birschell. A large epiphitical orchid, having branched panicles of flowers, each of which is about two and a half inches across; sepals and petals narrow, chocolate-brown and green, lip white, and red towards the base.—(*Bot. Mag.*, 4919.)

119. Pernettya furens. Nat. Ord. *Ericaceæ.*—A hardy, low

The flowers are of a clear pure rose colour. It is an acquisition to this fine tribe.

130. FUCHSIA, MALAKOFF.—A variety raised by Messrs. Veitch, with a double corolla of a deep purple, and broad crimson petals. It is a large flower, very showy, and of excellent habit.

131. FUCHSIA PENDULINA.—A hybrid raised between a pendulous Peruvian species and *serratifolia*. It flowers very freely, small plants even producing fine corymbs of delicate glossy carmine flowers, three inches in length; the corolla deep pink. It possesses an ornamental foliage, and is altogether one of the most elegant of this tribe.

132. CLEMATIS GLANDULOSA. Nat. Ord. *Ranunculaceæ*.—Our stoves have received an acquisition in this fine stove climber, one of very free growth, and a profuse bloomer. The petals of the flower are of an intense purple, approaching to black, with anthers of pure white, such opposite colours forming a fine contrast. It is a native of Java, where it was discovered by Mr. Thomas Lobb on Mount Salak, who sent it to Messrs. Veitch.

133. JUNIPERUS PYRIFORMIS. Nat. Ord. *Coniferæ*.—Another of Mr. Lobb's introductions, when on his Californian tour. He discovered it growing on Mount Bernadino. It is a fine, distinct species, the fruit of which resembles small pears when young. The berries are deep purple, with a glaucous bloom on them. It grows as a low tree, from ten to twelve feet high, and is perfectly hardy in this country.

134. DENDROBIUM LITUIFLORUM. Nat. Ord. *Orchideæ*.—A fine orchid, of which the native country is unknown, received from R. Hanbury Esq. The flowers are from four to five inches across, spreading, of a pale lilac colour, with a deep, rich violet lip; it is a very handsome species. (*Gard. Chron.*)

135. PHOLIDOTA SUAVEOLENS. Nat. Ord. *Orchideæ*.—Much resembling a Lily of the Valley, but is an orchid, possessing like-formed leaves, flowers, colour, and charming scent. It has been flowered by the Bishop of Winchester, at Farnham Castle. Its origin is not known. (*Gard. Chron.*)

136. RIBES SUBVESTITUM. Nat. Ord. *Grossulaceæ*.—A very pretty flowering hardy shrub, sent from California by Mr. W. Lobb, and belonging to the same section as our *R. speciosum*. The flowers, however, are considerablv larger than those of that species, and of a deep crimson colour. This will be a beautiful addition to our shrub borders, and deserves extensive cultivation.

NOTES FROM KEW.

SINCE our last visit to the Royal Gardens we are glad to notice that they are kept in very good order, and that many improvements and additions have been made; the bedding plants have been judiciously arranged, and the collections are in a healthy and generally flourishing condition. For some time the want of a better and more extensive edifice to contain the rapidly increasing contents of the Museum has been pressing, and we are happy to announce that a fine building intended for this purpose is rapidly approaching completion, situate opposite the main entrance of the grand conservatory, at the further side of the lake. In the latter a fountain now plays, and the vases around are filled with plants in full bloom. In the great conservatory the plants and Palms are looking remarkably healthy. The *Victoria Regia* in the new house, built purposely to accommodate that and other aquatics, looks poorly and we have never seen it flourish here so well as in the smaller house, in which it was originally placed, where, being nearer the glass, it has always grown well. In the new house we noticed *Cyrtanthera Pohliana* in bloom, a plant very like *Justicia carnea* in habit and flower, the latter being of a more rosy red; the calyx and leaves very dark; the pretty *Asystasia Coromandeliana flore-luteo,* a creeping plant, very free blooming, the flowers of a delicate sulphur-yellow, tube one inch long, corolla of five petals, one inch and a half in diameter.

In the house devoted to Rhododendrons the plants are likewise very healthy. We remarked *Rhododendron glaucum*, from Sikkim, in flower, a free bloomer, flowers salmony blush, with black anthers, in heads of four to six each, from one to one inch and a half in diameter; the plants about two feet high. *R. Keysii*, from Bootan; the habit singular, flowers being produced in a dense cluster around the stems, tubular in shape, about one inch and a half in length, by a quarter of an inch in diameter, of a thick, waxy substance, almost like some of the Heaths; colour pale orange-red, with a greenish mouth, in which appear small black anthers. The straggling habit, and form of the flowers are totally different from the generality of this genus.

In the greenhouse a plant of *Arctotis grandiflora* was in bloom, making a fine show; the flowers are large, near five inches in diameter, like a large Marigold, of a brilliant orange colour. It is a native of South Africa, and of spreading habit. *Primula mollis*, the flowers in whorls of six to eight in each, produced up the stems, which are about one foot in height, rosy purple, dying off paler, the eye of a deep crimson-purple. In a stove adjoining the Museum was a large well-grown specimen of *Medinella magnifica* in bloom, having from twenty-five to thirty heads of flowers. The collection of Gloxinias was very pretty in this house. Among the erect-growing kinds we remarked, as fine, *Prince of Prussia*, white, with a crimson throat, and a deep crimson blotch at the base of each segment; and a *seedling* raised in the gardens, unnamed, having a deep, intense, velvety, purple throat, very good. *Majestica*, not of erect habit, is a very fine flower also, the mouth being three inches across, of a fine crimson-purple. In the large greenhouse was *Calceolaria violacea*, covered with its pretty little spotted, lilac flowers; it is a bushy plant, with neat cut foliage. The Azaleas, Acacias, Cinerarias, Chorozemas, and Rhododendrons in this house were in fine show. We also noticed a plant of *Cantua buxifolia;* it is of very straggling growth, five feet high, with about two dozen flowers open, the tube three inches long, scarlet-red, and the corolla rosy purple, one inch and a half across. A young plant of *Rhododendron Dalhousianum*, about two feet and a half in height, had four of its immense flowers out; they are of a thick waxy substance, creamy white, with greenish yellow streaks, each flower being about five inches long, and four across the mouth. Another young specimen, three feet and a half high, had two heads of blooms out. In the Heath-house there was a good display of this tribe, as well as of Pimelias, Aphelexis, etc. The Ferns and Lycopods were growing freely, several of them being very fine specimens. Many varieties of Begonia were in flower in the stove. *Begonia odorata*, a very sweet-scented species, was represented by a specimen near two feet high, bearing large panicles of delicate white flowers, and large leaves of a clear bright green. Of *Begonia nitida*, a fine plant was in bloom; the flowers are large, about one inch and a half across, the petals very broad, pale flesh colour, and large yellow anthers. It is a very free-blooming kind, and the panicles of flowers are large.

A long span-roofed house has been lately put up, devoted to the Cactus tribe. Amongst the most remarkable of these plants in flower was *Epiphyllum nitens*, the blossoms about seven inches long, with a cup-shaped corolla, incurved, pale lemon-yellow, the sepals and bracts salmon-pink; it was introduced in 1852. *Phyllocactus crenatus*, fine large flowers, also of a delicate pale yellow, with deeper sepals and bracts outside; the diameter of the blossoms across the mouth is six inches. Many fine specimens of Aloes, Crassulas, and Amaryllis were also in bloom.

In the old Victoria house we found a small but healthy plant of it, numerous specimens of Ixora, and *Medinella magnifica;* a nice plant of the latter in a thirty-two-sized pot, with two very fine heads of flowers. *Streptocarpus biflorus*, an improvement on *S. Rexi*, with larger flowers, and two on each flower-stalk. *Didymocarpus Humboldtii*, from Ceylon, very pretty, delicate blossoms of a pale blue. Here also was growing in a glass vessel a specimen of that remarkable novelty *Ouvirandra fenestralis*, the lace-leaf plant, from Madagascar, of which we inserted a notice in the *Cabinet* for March (p. 75). One or two fine specimens of *Coleus Blumei* were flourishing. A considerable number of Orchids were in flower, in the erection appropriated to them; the most ornamental were the following, mostly good specimens: *Dendrobium fimbriatum oculatum, Paxtoni*, and *densiflorum; Cattleya Mossii, Phalænopsis amabilis, Lycaste cruenta, Brassia brachiata, Cypripedium barbatum, Sobralia macrantha* (a fine plant, with about thirty of its large, delicate purple blossoms out), *Oncidium flexuosum, Acanthophippium bicolor*, and a new species of *Galeandra*, from the Amazon, not yet named.

QUESTIONS, ANSWERS, AND REMARKS.

New Show Chrysanthemums and Verbenas.—Would you or any of your correspondents be kind enough to supply me with a descriptive list of about a dozen of the best new varieties of Chrysanthemums, and of about twenty Verbenas for show? A reply in the next number of your useful work will be esteemed a favour.—C. E. Kettle, *Stamford.* [We recommend the following, as the best of last season. *Chrysanthemums.*—Auguste Mie, carmine, with a yellow tip, incurved petals; a fine, full, and extra flower. Aurore Boréale, bright orange-cinnamon, edged with deep yellow, a distinct full flower, free and early. Didon, deep golden yellow, of intermediate size, half anemone-flowered, early. Eclipse, pale lemon, with a yellow centre, half anemone-formed, very free and early, extra fine. Eole, rosy blush outer petals, centre yellow, fine petal, good. Hermine, an incurved flower, blush, tipped with rose, free and early, extra fine. Irène, blush-white, full flower, fine. La Radieuse, rose and white shaded, full, very early and free. Le Prophète, fine yellow, good petal and flower. Madame Lebois, creamy-buff, incurved flower, distinct and fine. Madame Passy, lavender, fine full flower, early and free. Prince Jerome, yellow, tipped with red, incurved flower, fine. *Verbenas.*—Bicolor, orange-scarlet, with a large yellow eye. Carminata, rosy purple, with a dark eye. Cephale, orange-crimson, centre white, fine form, and good trusser. Duc d'Almeida, splendid scarlet-red, good truss, and excellent form. Empress of France, pink, with a deep rose-coloured eye, extra large truss and flower, fine. Florence Nightingale, cerise, with a yellow centre. Foudroyant, salmon, a large crimson eye, fine habit and truss, good form. General Bosquet, violet-blue, with a large bright eye, good form, extra fine. Gloire de France, scarlet-cerise, fine form, and truss. Gloire de Lyon, mulberry-crimson, excellent form and habit, extra fine. Julie Paquin, blush-white, pink eye, good habit, and fine form. Madame Adolph Weick, purple striped, and shaded with fiery red, distinct and fine. Madame Kien, white, with a purple centre, good truss and habit. Madame Olympe, pure white, flowers fading off to rosy lilac, fine, dwarf, free-blooming, and compact habit; a very beautiful variety. Monsieur Richalet, lilac and white, striped and shaded, large, extra fine. Mrs. Holford, fine clear white, large truss and fine habit. Pallas, violet-rose, beautiful distinct shade of colour. Rose Rigaut, brilliant orange-scarlet, with a yellow centre, compact habit, very fine. Triomphant, violet-rose, shaded and mottled, a large crimson eye, covering near one-half the flower, good truss, extra fine. Violacea, blue-violet, with a white centre, good truss, extra fine.—*Editor.*]

Flora of South Africa.—Throughout the grassy mountains which the hunter must traverse in following the rheebok, his eye is often gladdened by romantic dells and sparkling rivulets, whose exhilarating freshness strongly and pleasingly contrasts with the barren rocky mountain-heights immediately contiguous. The green banks and little hollows along the margins of these streamlets are adorned with innumerable species of brilliant plants and flowering shrubs in wild profusion. Amongst these, to my eye, the most dazzling in their beauty were perhaps those lovely Heaths for which the Cape is so justly renowned. These exquisite plants, singly, or in groups, here adorn the wilderness with a freedom and luxuriance, which could the English gardener or amateur florist behold, he might well feel disheartened, so infinitely does nature in this favoured clime surpass in wild exuberance the nurslings of his artificial care. I remember being particularly struck with two pre-eminently brilliant varieties, the one being a rose-coloured, the other a blood-red bell; and though I deeply regret to say I am a poor botanist, even in the heat of the chase I paused, spell-bound, to contemplate with admiration their fascinating beauty. Others, with their downy stems and waxen flowers of every gaudy hue, green, lilac, and various shades of pink, red, and crimson—some of them with brown lips to the bell—flourished in the richer hollows of their native glen, or bloomed with equal loveliness along the arid cliffs and fissures of the overhanging rocks. Almost equalling the Heaths in beauty, and surpassing them in the additional attraction of their scented leaves, a whole host of Geraniums fill the balmy breeze with their delicious perfume. These are too well known to admit of any novelty in description, but I may mention, *en passant*, that they attain a far larger growth in their native soil than I have been in the habit of seeing in our greenhouses. Small groups of the lofty, fair, conscious-looking Iris rear their graceful heads along the edges of the streams. Their fairy forms reflected in the waters, "they seem to stand like guardian Naiads of the strand." Another tribe of plants which particularly delighted me, from old associations, though not so striking as many of its neighbours for perfume and brilliancy, was composed of several varieties of the light, airy Fern, or bracken, which. whether gracefully overshadowing the mossy stones, eternally moistened by the bubbling spray of the stream, which they kissed as it danced along, or veiling the grey lichen-clad masses of rock in the hollows higher up, strongly reminded me of those so conspicuously adorning the wild glens in the mountains of my native land. Besides these, a thousand other gay flowers deck the hills and plains wherever the eye can fall. Endless varieties of the Ixia, the Hæmanthus, the Amaryllis, the Marigold, and a number of Aphelexis, are scattered round with a lavish hand; also the splendid Protea, whose sweets never fail to attract swarms of the insect tribes, on which several bright kinds of fly-catchers, their plumage glancing in the morning sun, are constantly preying. Farther down these water-courses, in the dense shady ravines, the jungle is ornamented with long tangled festoons of different creepers, among which the wild Jasmine ranks foremost, hanging in fragrant garlands amid the shaggy lichens, and bunches of bright orange-coloured Mistletoe, for which the forests of Africa, in the vicinity of her sea-coasts, are so remarkable. While touching on the floral beauties of the hills more immediately adjacent to the sea-coast, I may remark that here are the great nurseries for Heaths and Geraniums. As the traveller advances up the country these gradually disappear, and, together with the animal kingdom, the vegetable world assumes entirely new features; the colonial forest trees, bushes, and plants being succeeded by a vast and endless world of loveliness; unseen, unknown, untrodden, save by those varied multitudes of stupendous quadrupeds, whose forefathers have roamed its mighty solitudes for ages.—*Cumming's Hunter's Life in South Africa.*

EASY AND EFFECTUAL MODE OF FUMIGATING CONSERVATORIES.—Take some coarse brown paper, cut it into squares of about sixteen inches. Soak them in a strong solution of nitre; put them by to dry. Spread them out flat, and cover the surface thinly over with tobacco; then begin at one of the corners, and roll it up as the cook does a roll pudding; tie the middle with a thread, and also the two ends. Having shut up the house and made all ready, place two or three pieces of lath across an empty flower-pot, and upon these lay three or four of these paper rolls—light them at both ends, and leave them to do their work, which they will do most effectually. In half an hour you will find the green-fly, etc., destroyed. Give a slight syringing next day, and your plants will be found to be perfectly clean. If the conservatory is very large, it will be necessary to remove the plants affected to some smaller compartment. These rolls should not be made up till wanted, as the paper will contract moisture, and so will not burn freely. Dry the papers at the fire previously to making the rolls. The above may be nothing new, but I have found the greatest benefit from it.—G. LEAPINGWELL, *Cambridge* (*in Gard. Chron.*)

HYACINTHS.—The annexed varieties are either new or very select, and are said to be all of the finest character. Some are sent out for the first time this year by the Dutch growers, consequently at very high prices; one indeed, Paix de l'Europe, is offered at the enormous rate of £21 per root. Prince d'Orange, semi-double deep rose, large bouquet, flowering very regularly, forcing early, fine well-shaped bulb, fit for glasses or pots. Val Walré, double shaded dark rose, fine bouquet, well formed, early forcing, fine bulb, of a good size. Goethe, very double, of a good yellow, a large bouquet, and a fine form, forces early; a fine bulb for glasses or pots; this is, without doubt, a splendid variety. Carl, Kronprinz von Schweden, very double blue, with a violet tinge, the form of the bouquet resembling Laurens Koster, but more compact and regular, a fine show flower. Van Speijk, extra double, blue shaded with violet, unique colour, enormous bells, sometimes larger than that of any other Hyacinth known, bouquet of the most perfect form, larger than Grootvorst's; this Hyacinth may be considered as one of the best sorts raised the last fifty years, it forces regularly good and early. Goerres, not a show flower, but a single dark red variety of great merit, as it is very early, and produces several flower-spikes, which are most adapted for cut flowers; the bulb is of a good size and form. Maria Catharina, single dark red flower, and bouquet of superior form, regularly and early forcing, for glasses as well as for pots, and extra for bedding out, bulb of perfect form, and as large as any other known; this sort will become one of the leading varieties. Ninon de l'Enclos, single deep rose, good flower and bouquet, bulb very large, and of the best form there can be for glasses; this is one of the most favourite sorts among amateurs who grow Hyacinths in glasses. Kenau Hasselaar, single rosy pink, large bells, very regular flowering sort, good bouquet, enormous bulb. Miss Aikin, single rosy white, extra large bouquet of a good form, fine large flowers, bulb of a good size, and perfect form for glasses. Mozart, single rosy white, large flowers, good bouquet, a superior sort, bulb fine and large. Madame de Stael, single pure white, resembling Grand Vainqueur, but the form of the bouquet more perfect, a good forcer, and superior bedding variety; the bulb is very large and well formed; this variety is one of the best of this colour. Mirandolina, single pure white, well-formed flowers and extra large bouquet, bulb very large and fine; an extra show variety, good for every purpose. Jenny Lind, single pure white, large bouquet, fine flower, well-formed bulb; a variety of great merit, especially as it belongs to the earliest of this colour. Paix de l'Europe, single pure white, largest bouquet of all varieties known, surpassing Mont Blanc, well-formed flowers, adapted for every purpose, a superior and extra large bulb; this variety is now offered for the first time. Hermann, single yellow, orange shaded as Koning van Holland, very large flowers and good bouquet, enormous well-formed bulb. Elisabeth de Valois, single black, one of the darkest known, superior-formed flowers, bouquet not large, but well formed, good bulb for glasses; a variety much estimated for pot and glass cultivation. Mimosa, single black, fine flower, extra large bouquet; a variety much in demand among cultivators in Holland, as it is considered the finest in this colour; good bulb; a superior forcing and bedding variety, which ought to be admitted to the smallest collection.

CROCUSES.—The following is a list of most of the named varieties of these universal spring favourites. They can be obtained of most of the London seedsmen at moderate prices. When grown in pots and forced slowly in a moderate heat, they may be transferred to the drawing-room, covering the soil with some nice fresh moss. They have a beautiful effect in winter, when snow covers their out-door companions. Albertine, striped; Cœruleus multiflorus, light blue; Cloth of Gold, deep yellow; Cloth of Silver, white; Couronne blanche, white; David Rizzio, purple; Grand Duc, dark blue; Grande Duchesse, white; Grand Lilas, light blue striped; Jenny Lind, white; La Candeur, white; La Majestueuse, violet striped; Large Yellow; Laurette, striped; Mont Blanc, white; Non plus ultra, large blue, white bordered; Prince Albert, dark blue; Pollux, white, elegantly striped, large bulb; Queen Victoria, white; Sir Walter Scott, large, striped, extra; Sir John Franklin, dark blue, very large; Van Speyk, violet striped; Vulcain, dark blue; Versicolor, striped.

ON HUMEA ELEGANS.—The culture of this graceful biennial is very easy, but although introduced so far back as the year 1800, it has not been in general cultivation until of late years. No plant has a more graceful appearance than this, when waving its pendent tresses to the breeze, and glittering in the sun. It is particularly adapted for growing in vases or ornamental pots, placed on a lawn, or before a greenhouse. About midsummer sow seeds in a pan of light soil, placing it in a hotbed until the plants come up and are in rough leaf, after which remove them to a cold frame, and give plenty of air, with a slight shading from hot sun for a fortnight. They may then be potted singly in small sixties. Use a light soil, and plunge them in sawdust in a cool frame. Keep them close and shaded until strong enough to stand out, at which time gradually inure them to the sun and air; after which they will only require protection from wet or or cold weather. In the autumn and succeeding spring, shift them as it becomes necessary into larger-sized pots, using turfy loam and decayed leaf soil; it is requisite that care be taken not to let them become pot-bound, for if stinted in pot-room, or insufficiently attended to with regard to watering and rich soil, their beauty is much diminished. On the contrary, with liberal treatment their foliage will continue in a luxuriant state until cut off by frost. In winter a low temperature, abundance of air, and light will be found to suit those intended for planting out. Before turning out give plenty of water, and continue the same until they are fully established. If kept for in-door decoration, their appearance is not equal to the show they make on a lawn. Insects are liable to infest the foliage in spring, but a little attention to fumigation with tobacco-smoke, will be quite sufficient to keep them down. I have had as many as sixty-five plants in bloom in my garden during the past year, creating a fine show.—JOHN HUNT, *Hull.*

LESCHENAULTIA FORMOSA.—To those who have only a greenhouse, *Leschenaultia formosa* will make a fine display in the spring months. It should be grown in a moderately sized pot, and kept within two or three feet of the glass, for it is very important that it be fully exposed to light, shading only at midday from the direct rays of the sun. It delights in heath soil, with a good portion of silver sand; and due attention should be paid to watering with water of the same temperature as that of the house in which the plant is grown.

BEAUTY OF FLOWERS.— Who would wish to live without flowers? Where would the poet fly for his images of beauty, if they were to perish for ever? Are they not the emblems of loveliness and innocence—the living types of all that is pleasing and graceful? We compare young lips to the rose, and the white brow to the radiant lily; the winning eye gathers its glow from the violet, and the sweet voice is like a breeze kissing its way through the flowers. We hang delicate blossoms on the silken ringlets of the young bride, and strew her path with the fragrant bells when she leaves the church. We place them around the marble face of the dead in the narrow coffin, and they become symbols of our affections—pleasures remembered and hopes faded, wishes flown, and scenes cherished the more that they can never return. Still we look to the far-off spring in other valleys—to the eternal summer beyond the grave, when the flowers which have faded shall again bloom in starry fields, where no rude winter can intrude. They come upon us in spring like the recollections of a dream, which hovered above us in sleep, peopled with shadowy beauties, and purple delights, fancy broidered. Sweet flowers! that bring before our eyes scenes of childhood—faces remembered in youth, when Love was a stranger to himself! The mossy bank by the wayside, where we so often sat for hours, drinking in the beauty of the primroses with our eyes; the sheltered glen, darkly green, filled with the perfume of violets, that shone in their intense blue like another sky spread upon the earth; the laughter of merry voices; the sweet song of the maiden—the downcast eye, the spreading blush, the kiss ashamed at its own sound—are all brought back to the memory by a flower.—*Miller.*

STANDARD LILACS.—When this shrub is treated as a standard, it has a very pretty appearance. It can easily be trained up to a straight stem, and all suckers cut away. It will soon be found to form nice round heads, which may be kept in order with the pruning knife. When grown in this way it blooms in much greater profusion, and if kept in tubs, boxes, or large pots, they can be placed on the lawn when in bloom, and will have a very attractive appearance.—T. JOHNS, *Newcastle.*

THE FIRST PELARGONIUM.—It appears that the first Pelargonium seen alive in England was that called *triste*, a tuberous-rooted species, which has since become scarce. It is thus spoken of by Johnson, in his edition of Gerarde's Herbal. "There is of late brought into this kingdome, by the industrie of Mr. John Tradescant, another more rare, and no lesse beautiful than any of the former (Storksbills), and hee had it by the name of *Geranium indicum noctu odoratum*, this has not as yet beene written of by any that I know. I did see it in floure about the end of June, 1632, being the first time that it floured with the owner thereof." In the next century many were imported from the Cape of Good Hope by the Dutch; and before 1732 six species were grown in Sherarde's garden at Eltham. Linnæus knew 25 species cultivated in Europe, and he called them Geraniums. L'Heritier, in 1787, divided the genus nearly as it now stands. In 1812 there were 102 species enumerated in the "Hortus Kewensis."

VIOLET-COLOURED GLASS.—It is now a well-established fact that by the use of glass tinted of a violet or blue colour the principles of vegetation are much quickened, and that seeds covered with glass so tinted will germinate much more certainly and rapidly than when no such material is employed. It is the *actinic* or chemical rays which are most effective in promoting growth, and such are known to be most active in the blue or violet end of the solar spectrum. On the other hand, yellow or red light is destructive to vegetation, and seed or cuttings placed under such influence will come up thinly, be unhealthy, and after a long interval. These hints will be sufficient to prove the advantage of having hand-glasses, bells, and indeed the whole of the glass used for horticultural purposes, slightly tinted blue. A few sheets of such glass may be used with much success in promoting the germination of seeds, one being placed over the top of each pot, until the seeds have made their appearance.

ON THE PROPAGATION OF THE ERYTHRINA CRISTA GALLI, AND LAURIFOLIA.—As soon as the plants of the *Erythrina* have done flowering (or even plants that have not flowered at all, but have ripened their wood tolerably well, will answer the same purpose), cut them down, and make as many cuttings of the stems as there are buds, preserving, if possible, the leaf to each bud, and if the buds are opposite each other, as is sometimes the case, the stem may be split, if near the bottom, where the wood is hard and well ripened; for this part of the stem will root, even without the assistance of the foliage. Indeed I have found that the top and bottom, that is, the hardest and softest parts of the stem, root more readily than that which is in an intermediate state; but the ripest wood is best. Having prepared the cuttings, plant them separately in small pots, with the eye or bud just below the surface of the mould, which should be light and sandy, the piece of the stem which forms the cutting being laid flat; then immediately place them under a hand-light, on a strong bottom heat, so that the heat under the glass may range from 75 to 80 degrees Fahrenheit, shading regularly when the sun is likely to scorch them, or dry up the moisture; for they should be kept constantly well watered. In three weeks they will be rooted, when they may be gradually hardened, till they will bear a shady part of the stove. Thus, from every single stem, no less than from twenty to thirty plants may be annually raised; and if the flowering plants are forced, so as to make them flower twice a year, double that number may be obtained.—JOHN MORGAN, *Cambridge*.

CLINTONIA PULCHELLA.—As many find it difficult to get the seeds of this beautiful little flower to germinate, I recommend the following treatment as both easy and certain. Let the seeds be sown in fine soil in a shallow pan, and covered lightly, and a little sand sifted on the surface; after about a week, water them through a fine syringe till the water rises to the surface, which keep up to the mark, and the plants will rise freely without heat.—W. DUMBRILL, *Beechland*.

TENACITY OF LIFE.—A plant may lose nearly half its weight by drying, and yet be restored by care. De Candolle has recorded an instance of a *Sempervivum cæspitosum*, which had been placed in a herbarium for eighteen months, and from which he afterwards detached a living bud and reared a plant. But the tenacity of vegetable life is best exhibited in the property which seeds possess of retaining their powers of germination, after having been exposed to very considerable degrees of heat and cold. Some also, which have partially germinated, may be again dried and kept for months, without losing the power of germinating afresh, although they are sensibly weakened by such treatment. The revival of plants among the cryptogamic tribes, after a very long suspension of the vital functions, is well authenticated.

TO DESTROY CATERPILLARS ON ROSE-TREES, AND OTHER PLANTS.—When the buds are just unfolding themselves on the rose-trees, a number of small green caterpillars frequently make their appearance, and begin to eat the small buds. I immediately make a strong decoction of common tobacco-leaves; I let it get quite cool, and, when the dew is completely evaporated, I sprinkle the trees all over each morning, by means of a watering-pot with the rose on, till every part is thoroughly washed with it. I continue this operation three or four days successively; and, should rain come on about the time of sprinkling, so that the liquid is carried off, as soon as the foliage is dry the sprinkling must be again repeated. It will soon be found that the caterpillars all disappear, and the undisturbed buds will then unfold themselves. I have practised this method for some years with complete success. and indeed never found it to fail; so much so, that even buds that were pretty far advanced and almost eaten through by the caterpillars, soon began to unfold the remaining mutilated leaves and petals. I am fully persuaded of the utility of my plan, and confidently recommend it to the notice of your readers.—*H. S.*

REMARKS ON THE MITRARIA COCCINEA.—The annexed is an account of my method of flowering the Scarlet Mitraria. It is a plan which I have found very successful, my plants being literally covered with fine flowers. After the plant has bloomed, I turn it out of pot and shake off a portion of the old soil, repotting it into a size rather larger than that previously employed, in a mixture of equal parts of loam, leaf-mould, and friable peat, well incorporated. In this compost the plants will be found to do well, and flower luxuriantly. A cool greenhouse suits them best, for although it was expected to prove hardy, I do not find them bear the exposure with me, in the north of England. It is a plant which is well calculated to become a universal favourite, and I am certain that with the above treatment it will flower very freely.—*D. M.*

WATERING PLANTS.—It is always best to give one good watering that will sink into the ground to the lowest roots of the plant, than to give a dozen slight sprinklings. It effects more good, and lasts longer.

TEMPERATURE OF STOVES, ETC.—It is mostly the practice with gardeners when heating greenhouses, stoves, pits, etc., to have the fires made up at night, and of course considerably raise the temperature. Now we must always, in artificially growing plants, try to imitate nature as close as possible, therefore always allow the houses to be somewhat cooler instead of warmer, otherwise the plants will be forced more in the night than the day, which is not the case with nature.

TEN-WEEKS STOCKS.—To possess a splendid bed of fine double Ten-weeks Stocks, sow the seed broadcast about April, in an open bed or patches, well manured, and with fresh soil added if required; and lest the seeds should be a great proportion single, sow thick enough to allow three out of four being taken out. As soon as they show by the bud whether single or double, pull out the single, and pinch off the centre flower-stems of the double, this causes them to make fine strong plants, which soon fill the bed with a profusion of fine strong spikes of entirely double flowers, the admiration of all, and the surprise of those ignorant of the means by which it has been produced.—*J. Hopwood.*

ON BORONIAS.—This is a very pretty and interesting genus of New Holland plants; all the species are remarkably free-flowering, and some are to be seen in bloom at almost any period. If the following remarks on their treatment be deemed worthy of a place in the next month's number, I shall be glad to see them inserted. The soil which is best adapted for them is a *fibrous* and *very sandy peat*, and it is absolutely necessary to use great precaution in potting, to give them *complete drainage;* in fact, much of the success of growing them is dependent on this point, as they require the most assiduous attention, in watering during the summer season. The application of this element should be in small quantities, and supplied frequently; so that, whilst anything like *excess is avoided*, the plants may never experience the least *degree of want.* They require abundance of light, and therefore should never be crowded by other plants; they will be found to grow vigorously, if submitted in spring, after potting, to a slight increase of temperature. A pure atmosphere is essential to their growth; but, like Epacris, they cannot bear exposure to a current of air, or even being placed very near where air is admitted, as they are exceedingly liable to suffer by an exposure to cold winds. They require to be kept in the greenhouse during the summer, and are much benefited by slight shading during hot sunshine. In tying, spread out by little twigs, so as to keep the centre of the plants open, thereby allowing a free circulation of air and light. If these conditions are complied with, healthy and vigorous-blooming plants will be the result.—*W. Knight.*

REMARKS ON THE VEGETATION, ETC., ON THE PERUVIAN ANDES.—Then comes a new zone of this abundant vegetation, while a glance down the giddy steep enables the naturalist to descry, even by the different shades of green, the separate regions of plants which he has passed, and which nowhere rise with greater regularity, and more accurately defined, than they do in these Andes. A new zone then commences, which might be imagined similar to those regions of the mountains in Northern Europe, if the mild air, the deep blue sky over head, and, between the thick-woven trees that cover the ground, levelled by the winter's storms, the violet, Amaryllis, and variously tinted Alstrœmerias did not severally appear to dispel the delusion in which the wanderer may have indulged. It is a work of no small labour to force one's way through the tangled rowth, that insidiously envelopes many a sharp stone and many a deep cleft; but no anger is here to be apprehended from poisonous snakes, gigantic stinging ants, or any f those numberless tribes of noxious animals which inhabit tropical climes; as none f them exist in this highly favoured region. Now, the last shrub is passed, and the ound becomes more stony, whilst the increasing purity and coldness of the air cause every respiration to be drawn with a sensation of positive delight. Fresh treasures here burst upon the view, and reward the adventurous mountaineer, who is often compelled to relieve his full heart by uttering loud shouts of joy, to which his faithful dog, the sole companion and witness of his delight, responds by many a yelp of exultation, and by rolling on the snow and playing sundry fantastic gambols. It were useless labour to attempt enumerating here the individual plants that are successively seen when climbing the highest ridges of these rocks; and I may only mention, that no naturalist can imagine the Alpine Flora of the south of Chili to be so beautiful to the sight and so attractive to the scientific observer as it actually is. All that the Cape of Good Hope and New Holland can exhibit in their arborescent flowers, which, without attaining the gigantic growth of tropical forests, are yet inexpressively charming—all that the Alpine productions of Europe can present, in their miniature forms and myriads of small leaves, may be found happily blended in the plants of these Andes; as everywhere in Chili the Compositæ prevail, and you can hardly recover from the surprise of seeing numerous Senecios exhibiting their golden blossoms among their showy white or grey leaves, when you stumble on blue Perezias, and low shrubs of the Amellus, which bear united the foliage of the Rosemary and starry blossoms of the Asters, together with the reddish Lasiorrhiza, and the moss-like Nassauvia, species of a genus that is confined to the extreme southern part of South America, and of which three forms are here seen.—*Companion to Botanical Magazine.*

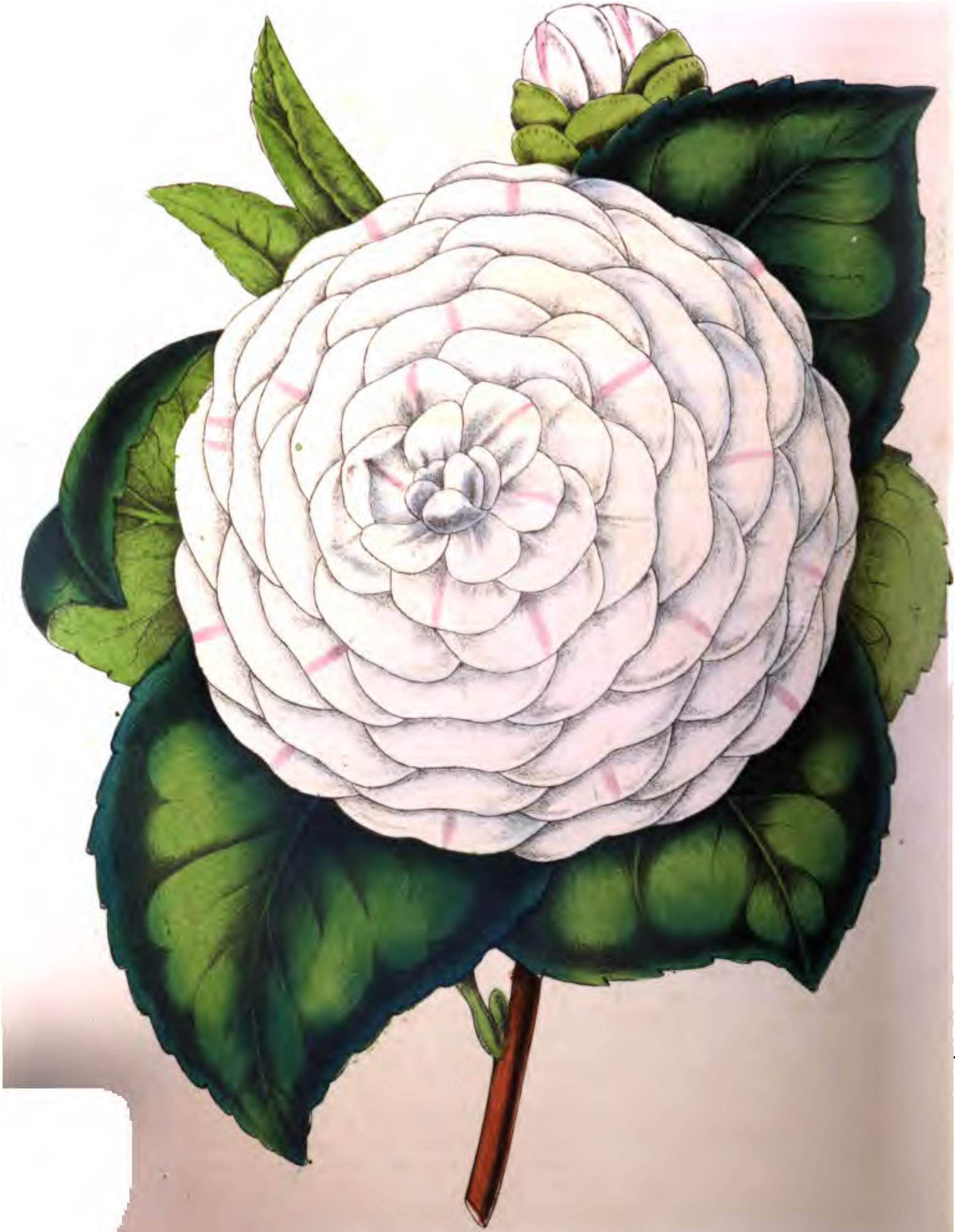
Deutzia gracilis.—Few plants, among the recent introductions to our gardens, possess more interest or have proved more valuable than the *Deutzia gracilis*, not only as an ornament for the shrubbery border, but also for pot cultivation. As a plant for early forcing, for the decoration of the conservatory, and also for cutting for bouquets, it is one of the most useful. Like its congeners, it is readily propagated by cuttings of the young wood, which require to be taken when it is in a half-ripened state. If the wood is strong and healthy, it will not be necessary to cut the cuttings at a joint, as they will strike just as freely if a leaf-bud and about an inch below is taken with it, and thus each joint or bud will make a plant. To ensure the cuttings rooting quickly, a gentle bottom heat will be necessary, and they must also be covered with a glass, to prevent the undue evaporation of the moisture of the cutting. In cultivation, any light rich soil will be suitable, such as a mixture of turfy loam, leaf-mould, and gritty sand; and when planted out, any enriched garden soil will suit it. As a pot plant it will require much the same treatment as *Wiegela rosea*—that is, the wood must be throroughly matured in the autumn, to ensure its blooming profusely when forced. We cannot imagine anything much finer, when grown to a good-sized specimen, than this very graceful plant, as, by judicious stopping, it may be trained into a very compact and elegant form.—A. Marshall, *Duffield.*

To Protect Tender Plants during Winter.—When it is found necessary to protect many of the beautiful flowering tender plants, the following method is recommended, incurring very little trouble, as well as being much neater and more effectual than most other methods. For tender shrubs, as standard Fuchsias, Rhododendron arboreum, Escallonias, Camellias, Salvias, Mesembryanthemums, etc., make frames in the following manner:—Take four strong stakes, strong hazel rods, insert them in the ground at equal distances round the plant, so as to clear the ends of the shoots; then unite the tops together to one point, and secure them there. Then cut, with a fine-toothed saw, some notches up the two sides of the rod which are outwards; having done this, take a quantity of deal laths that are about an inch and a half broad, these are then nailed to, crosswise, in doing which, commence at the bottom, and having fastened the first tier, place another above that, and so proceed to the top. In nailing the laths, place them in the notched part of the uprights, so that they overhang each other a quarter of an inch, but not to have the lower edge of the lath above to touch the upper edge of the lath below it; allow a space here of a quarter of an inch; this is easily effected by the notches being cut for the purpose. The openings at the overlaps admit air and light to the plant, but at the same time exclude wet from it. Both these advantages are of importance, in order to obtain the object desired. With very tender kinds of plants, strew in, previous to putting the case over, some dry fern-leaves, commonly called brake or braken, among the branches, this will keep them perfectly dry through winter, answering every desired end. Where brake is not to be had, branches of beech, with the leaves upon them, furze, or broom may be used to answer the same purpose. Cover the ground over the roots, to the extent of two or three feet, according to the size of the plant, and about six inches deep with chaff from the corn-mill, sprinkling it over with an inch or two of soil, to prevent its being displaced by the wind. This keeps dry under the covering, and preserves the roots better than any other material, such as bark, sawdust, leaves, etc. The framing of laths, etc., should be painted, and though used many years they will be as good as when new. Take off the frame from the plants when the severe weather is over, usually about the middle of April. The above kind of covering is far preferable to that of thatching over with straw, which keeps the plants dark, and the straw often becomes mouldy, and kills the plants. Coverings of wicker-work do not answer, the wet dripping through the covering, and being thus kept damp inside, more damage is done than if left exposed to the open air. For smaller plants, coverings of the lath framework suited to their size can be made. With such covering Maurandia, Lophospermum, etc., may be preserved without sustaining any injury.—*George Godfrey.*

Ixias, their Culture in the Greenhouse and Open Border.—Having for some years cultivated Ixias in such a way as to excite the admiration of all who have seen their luxuriance and beauty, I forward my plan of treatment. Early in spring, I prepare the following compost, namely: one part peat soil, one leaf-mould, one river sand, and one part rich loam; I burn and chop them at least three times during summer, when it is fit for use. About the last week in October I commence potting my plants, in pots about five inches across, well drained; after slightly covering the pot-stands with moss, I fill them with the above compost to within one inch and a half of the top. I then plant, at equal distances, five or six of the finest bulbs, and fill up the pot, making them pretty firm (if the soil be dry); after potting, I place them in a cold frame, and occasionally sprinkle them with water, and let them remain there until the pots are well filled with roots. In March I commence taking them to the greenhouse, at about 55° or 60°, in succession; and they will be found to exceed the most sanguine expectations. When the flowering season is over, I continue watering so long as any signs of life appear, but more sparingly as the tops decay; when quite dead, I lay the pots on their sides in the back shed, or any other dry place, where they remain until potting-time again. I keep all my bulbs, when dormant, in the pot, as I find them a great deal stronger and not shrivelled, as when taken up. Such of the bulbs as I do not pot, I plant in a border in front of the stove, at least four inches deep; I also cover the border with the old soil from the pots, being full of small roots, which will be found to strengthen the bed very much; if these be covered with a little litter in winter, they will be found to flower very beautifully for several months in summer.—*Harriet.*

Colours of Flowers.—The fugitive property of some colours is well known, and in no way better exemplified than as they naturally exist in flowers. The fume arising from a common sulphur match, which is, in fact, sulphuric acid, will change purple and crimson colours to pink. The blue, in combination with red, is readily discharged; indeed, a pink or purple flower might be completely bleached by holding it in the fumes of sulphur. Thus Roses and Dahlias have been made to assume a variegated and very novel appearance. Bright pink stripes and veins may be produced on the dark purple petals of Pansies, and other dark-coloured flowers, with a camel-hair pencil and oil of vitriol, to yield rather a pleasing effect. Such lines should not be drawn to the edge of the petal, or a little injury will soon be evident; nor should they be strong nor near together, as they quickly spread.—*Maund's Auctarium.*

Salvia Gesneriflora.—The brilliant scarlet flowers of this plant make it a most attractive object in the greenhouse. As soon as it has done flowering, cuttings should be taken off, and struck in a moderate bottom heat; and when struck, harden them off gradually, till they will bear placing in the open air. Repot as they require it, using soil as follows:—Two parts turfy loam, and one part rotten manure. Give them plenty of drainage, but never let them want water. A little weak liquid manure will assist them. I always bloom my plants in large pots. By liberal treatment, I get good specimens by autumn, some of which I use for early forcing (for which purpose they answer admirably), while others come in well for blooming in the greenhouse. I never keep the old plants a second year, as I find young ones, well managed, do better, for ey not only bloom more satisfactorily, but the flowers are much larger.—*Mid. Flor.*



JENNY LIND.

The Floricultural Cabinet.

AUGUST, 1856.

ILLUSTRATION.

CAMELLIA JAPONICA, *var.* JENNY LIND.

THE Camellia was first made known to Europeans by the accounts of some of the earlier travellers to Japan and the East, who related having seen in those countries rose trees rivalling the oak in size, with shining dark green foliage; and until the time of the Jesuit missionary, G. J. Kamel, in 1739, these relations were considered fabulous or exaggerated. The latter traveller procured two plants of the single red variety, which he succeeded in bringing to Europe, and disposed of for a considerable sum to Lord Petre, who sent them to his gardener, Mr. James Gordon, at Thornden Hall, in Essex, and not being acquainted with their treatment, the latter placed them in a stove temperature, which killed them. Mr. Gordon (who had previously taken a nursery at Mile End) procured another specimen in 1742, which he treated as a conservatory plant, and from it propagated a large stock, which was rapidly disposed of. The original plant stood in Mr Gordon's conservatory so late as 1837, when the nursery was broken up for building purposes. Since the above time many species and varieties have been introduced to and raised in this country, which it is unnecessary to particularise, and the Camellia has, in the variety now selected by us for an illustration, approached perhaps as nearly to perfection as it is possible to obtain it. Jenny Lind, which we now figure, is the property of Messrs. Henderson, of the Wellington Road Nursery, St. John's Wood, who purchased the stock of Mr. W. Mackenzie, of Philadelphia, America, for the large sum of *two hundred pounds;* in their nursery it has bloomed, and proved to be the finest Camellia yet sent out. In form and outline it is extremely good, the centre being well up and the petals arranged with great regularity; it is a pure white, with faint streaks of clear rose colour. We do not doubt that all who see it in bloom will consider it, as it really is, a fine acquisition to this lovely tribe of plants.

REMARKS ON CAPE HEATHS.

BY T. RUTGER, ESQ.

YOUR contributor "Amator Florum" (see number for July) brings to my recollection the period when I was quite an enthusiast in floriculture, and when the Cape Heaths pre-eminently claimed my attention, as being among my greatest favourites. I was therefore anxious to obtain success in propagating them, and having fully succeeded with regard to the fast-growing and slender-wooded varieties, I sent an article on the subject for insertion in the *Gardeners' Magazine*, where it is to be found in the eighth volume, at page 681.

As I considered the usual method at that period a tedious one, in regard to the time the cuttings took to strike, I tried several means to accelerate their striking, and eventually succeeded to my most sanguine wishes. If an abstract from the subject above alluded to may be thought worthy for the *Cabinet*, I give it for insertion, as perhaps many of your readers may not have access to the Magazine where it is to be found, and although it may be underrated, on account of it not being strictly original, yet the subject is in my estimation an interesting one, and may perhaps be useful to the lovers of one of the most interesting and beautiful tribe of plants which we have in this country. As what is here given is confined to the propagation of Ericas, it will not run counter to what "Amator Florum" has written on the *general* mode of their cultivation, and which I think is a good article on the subject.

"Early in the month of April, or as soon as the young shoots were about an inch long, I made choice of my cuttings. In taking off and trimming them for planting, they were handled as delicately as possible, for when so young they are extremely tender. I then cut them with a keen knife as near as possible to where they had been joined to the old wood, and put the ends of them into water until I had a sufficient number to make up a pot. This done, I made choice of one suitable in size to receive the striking-glass; I filled it up nearly two-thirds with crocks and the siftings of peat, and the remainder with peat very finely sifted, which I moderately pressed down, after pressing the striking-glass on the mould, in order to get the line of its circumference. I proceeded, with a dibber about the size of a small quill, to plant the cuttings, which was done carefully, without pressing them much, rather leaving them to be fixed by watering, than with the dibber. The pot being filled with cuttings, I watered them, standing at some distance, with a very finely perforated syringe, elevated so as to let the water descend on them like a gentle shower of rain. This was repeated several times, until I conceived the whole of the mould to be completely saturated; after which the glass was set over them, and the pot placed in the front of the greenhouse. A gentle syringing was repeated every morning for the first three weeks, and afterwards every other morning for about three weeks more. At this period many of the cuttings had begun to strike, and as soon as this was observable less watering was resorted to. In about ten weeks many of the cuttings were fit for potting off, which was immediately attended to, and, after being potted in thumb-pots, they were placed under a handglass or cold frame, in a shady situation, where they were gradually hardened by giving air, until they could bear exposure. Great care was taken in removing them from the cutting-pot, by gently raising them with a small piece of wood, cut for the purpose. They generally rose with little balls, around the outsides of which I could frequently perceive numerous small fibres protruding themselves, as white as milk. During several years' practice in raising Heaths in the above way, I have many times observed the small fibrous roots striking out two or three joints above the surface, making their way down the cutting to the mould.

"The success of the above mode I found rested principally, if not entirely, upon the state of the cutting, and the health of the mother plant. The cutting should neither be of the strongest nor of the weakest growth; and it is almost needless to add, that the plant should be healthy from which the cutting is taken. With regard to the varieties of slow growth, it is but seldom that cuttings can be found on them to ensure success by this method, as they are generally too thick and turgid, as well as the sorts too tardy in their growth; but I am convinced that means might be used with many of them so as to obtain cuttings that would strike in the above way, and of this I once had a proof. On visiting a gentleman's garden about ten miles distant, I perceived an Erica which had been improperly left in a house where forcing had been commenced; it was so drawn that its former habit was completely changed. On asking its name, I was told it was the *E. depressa.* It instantly occurred to me that cuttings from it in that state might answer my purpose. Accordingly I begged a few, and the result was that under the above treatment every one of them grew, to the number of about a score.

"The species of very easy growth, such as the *ignescens*, *gracilis*, etc., I took less pains with, by putting the cuttings under a handglass, on a north border, which, under the above treatment of watering and well draining, succeeded to admiration. I found by experience that the sooner the cuttings were potted off after taking root the better, as by remaining long in the cutting-pot they become drawn and sickly; their drawing might be prevented, by confining one sort to a pot, as air might then be given in any proportion. But in my case it was different, having frequently, through the want of a sufficient number of striking-glasses, four or five sorts together in a pot, some of which took less time than others to strike. However, under any circumstances, experience taught me early potting was best, as I found that they would not remain long in a healthy state in the striking-pot. I had not the opportunity of trying how they would strike in sand by the above method, as I could obtain none of the proper kind in that part of Cornwall where I resided. After potting, when the plants begin to grow, if their tops are taken off they will throw out side shoots, and during the following spring form nice little bushy plants. The usual practice of daily wiping the glasses is useless in this mode of propagation.

"Many persons, no doubt, are great admirers of this beautiful tribe of plants; but, through the difficulty often found in propagating them, they are induced to give up the task, and thus deprive themselves of the pleasure they would derive from having a collection of them under their care. On the supposition that one or two hundred kinds can be propagated by the above simple method, and that some others may be raised from seeds perfected in this country, a choice collection might be kept up at an easy expense, by purchasing now and then a few of those which, on account of their peculiar growth, structure, or delicacy, are difficult to propagate."

By way of addendum, I beg to add another extract from an article of mine in the *Gardeners' Magazine*, vol. ix., page 584. "During my residence in Cornwall, having a number of duplicates of Cape Heaths for disposal, Iwas struck with the idea that a clump of them out of doors would have a novel effect, and that if they flowered well, would make a handsome addition to the flower garden. I accordingly made choice of a situation; after excavating and laying a thick drainage of brickbats, broken pots, etc., which I covered with dead fern-roots and other matter, I covered it with peat earth to the depth of about ten inches, and in the month of April turned out my plants, many of which grew to admiration, and flowered beautifully the following autumn. Having succeeded thus far, and feeling fearful lest they should be disfigured, or perhaps killed, by the winter's frost, I proceeded to erect a temporary frame over them, with melon-lights, old sashes, and feather-edged boards; the latter serving for the back and nearly half of the roof, sloped backwards, and the old sashes for the front and ends, so that the whole, when finished, looked something like a little greenhouse; the lights were always off in mild weather, and also in frosty weather during the day, when the sun shone. In summer the plants grew rapidly, presenting a most beautiful foliage, with flowers of a very superior character, and, consequently were much admired by all who saw them. The species consisted of *Erica coccinea, verticillata, grandiflora, cruenta, ignescens, versicolor, mammosa, costata, tubiflora, Archeriana, curviflora, concinna, exurgens, vestita cerinthoides, ventricosa, baccans, Sparmanni, spuria,* and *melastoma,* with some others which I do not now remember. At the end of three years, when I left, the plants had arrived at a fine state of maturity, presenting a foliage delightful to the view, with a profusion of flowers in succession, according to their different seasons of flowering, far superior to any I had ever before or have ever since seen. I am inclined to think that very few of the Cape Heaths will survive the winters in Cornwall entirely without protection; however, I know of one exception in the *Erica scoparia*, which although not possessed of so much floral beauty as some others, is, when it has grown up conically to the height of four or five feet, in the very delicate and beautiful appearance of its foliage, a truly interesting species; in this state it has a most attractive appearance, and has been much admired. A plant of this species has stood out for three winters, and when I last saw it, it was in full vigour, and highly ornamental as a shrub in the place where it stood.

REMARKS ON THE GENUS TRITOMA.

BY A COTTAGER.

THIS very ornamental genus is not quite so generally cultivated as I think it ought to be, for very few plants can compete with its beauty, possessing handsome and very attractive flowers, a striking foliage and habit, combined with much hardiness. Their culture is easy, succeeding well in a light rich soil or sandy loam, and propagate freely by suckers or from seed. The situation chosen for them should be a rather sheltered one, and where there is a free drainage; any warm corner of the garden or border under a south wall, sheltered from cold winds, will suit, and they will repay the trouble of their cultivation with a profusion of their handsome spikes of bloom. Should frost be excessive, a covering of leaves round the roots will protect them. They may also be grown well in pots, but should in such a case be removed to the protection of a frame or cool greenhouse in winter. There are four varieties known in our gardens, of which I have five plants in my possession, which have for several years gratified me with a rich display of bloom. Of these, *Tritoma uvaria* is the oldest species, having been introduced just a century and a half. The spikes of flowers are from one to two feet in length, covered in the autumnal months with tubular-shaped flowers, of a brilliant orange-red colour. The foliage is herbaceous, of a pale green, and grows rapidly, the plants sending up a succession of suckers, which soon form a large bushy tuft. *Tritoma Burchellii* is not quite so hardy as the above; the flowering spikes are however longer, and the whole plant of stiffer and more rigid habit; it does not grow so freely as the foregoing, but is nevertheless a very showy variety; the flowers yellow and clear red. This is best propagated from seeds. *Tritoma media* and *T. pumila* are smaller-growing kinds, of free habit, and very pretty; the spikes from about ten to twenty inches in length, and their colour bright orange. They are all natives of the Cape of Good Hope colony, flowering late in the autumn, and even in mild winters, at which time they are beautiful companions to our Chrysanthemums, and other, though few, late blooming plants; indeed it is always with me a subject of wonder that they are not far more generally cultivated than they are in our gardens.

NOTES ON THE BOTANY OF THE MONTH.

BY MR. EDWARD SHEPPARD, BURY.

"Little weather, prophet, say,
Fair or foul the coming day?"

The common English Pimpernel, *Anagallis arvensis*, in full bloom this month, is frequently called the Shepherds' Weather-glass, because the corollas never expand in rainy weather, or when the air is overcharged with moisture; on the contrary, when the weather is dry and the sun shining, this pretty little flower bespangles our fields with its bright red eyes in a most agreeable manner, but which regularly close as Phœbus retires to "the chambers of the west." It is generally to be met with in ploughed fields and gardens, particularly in light sandy soil. Several members of the curious Orchis family are now in bloom, among which are the Butterfly Orchis, *Habenaria bifolia*, distinguished by its long and slender spur; the Fragrant Orchis, *Gymnadenia conopsea*, flowers light crimson, in a long spike, and very sweet scented, found in dry pastures and on heaths; the Spotted Orchis, *Orchis maculata*, with light purple dotted blossoms, and spotted leaves; the Bee Orchis, *Ophrys apifera*, having a large labellum or lip, much like a bee, the segments of the perianth resembling antennæ and wings of the insect, rose coloured. Several other kinds might be enumerated did space permit, some more or less rare than the rest. Fancy appears personified in this singular family, and remarkably curious as our native species are, they are far surpassed in this respect by their representatives in tropical countries. Their flowers are always grotesque in shape, sometimes fragrant, and generally of brilliant colours. Our Orchises are difficult to preserve in the garden, but are well worth seeking for in the field, not only on account of their peculiar forms, but for their beautiful colouring. When a youthful botanist, I well remember how perseveringly and ardently I sought for some varieties of this tribe, one of which, the *Ophrys apifera*, I only met with in one spot, and have not seen it in a wild state since.

"Bright insect-seeming flower! thou art indeed
Of thy gay family a curious child.
When first I met with thee, upspringing wild,
Hard by the path where did my footsteps lead,
How caught with admiration did I stop,
And cull thee from amidst the grassy spires!"

The queen of the waters, *Nymphæa*, is in full bloom this month. There are two British varieties of the Water Lily family, *Nymphæa alba* and *Nuphar lutea;* both frequently met with in quiet and sequestered pools. The former has been called the "Lady of the Lake," "Naiad of the Stream," and the "Swan among the Flowers;" and no one can behold it covering the dark waters of some shady pool with its broad, dark green, shining leaves, and offering to the god of day its expansive, large, cup-like flowers, without admitting the justice of these appellations, and admiring its surpassing grace and majesty. Mrs. Twamley says—

> "Oh! come to the river's bank, come to us there,
> For the White Water Lily is wondrous fair,
> With her large broad leaves on the stream afloat,
> Each one a capacious fairy boat.
> The 'Swan among Flowers'—how stately they ride,
> Her snow-white cups o'er the rippling tide."

The Yellow Water Lily, though neither so large nor so attractive as the white, is yet a fine flower, and makes a nice contrast when grown together.

If any one will take the trouble to pay a visit this month to Wimbledon Common, they may meet with that scarce plant the round-leaved Sundew, *Drosera rotundifolia*, growing in moist and boggy situations; this is almost the only station where this little floral darling is now to be met with, and it will well repay the search for it, being not only elegant in appearance but curious and rare; in height it is not more than about three inches, and is destitute of stem, except that supporting its small, rather insignificant, white flowers. The leaves all rise from the root, and spread like a rosette close to the ground: when young they are curled up, and of a pinky hue; when older, green, covered with red glands or hairs, at the end of each hair is found a little globule of a sticky juice, like a drop of dew, which gave rise to the common name of this plant, not being evaporated by the sun's rays. It has been designated the English Fly-trap, for insects settling on the leaves are retained by the sticky viscid secretion of the glands, and unable to get away. There are two other varieties sometimes to be met with, and both with longer leaves, growing in similar places, and equally singular in appearance. Our poets have noticed the Sundew, one of whom gives a good description of it, as follows:—

> "On the pool's half-dry banks here's the red and green hue
> Of that small moorland darling, the little Sundew,
> Each plant lying close, like a broidered rosette,
> Shining redly with ruby gems, thick o'er it set."

The *Hypericums*, of which there are several varieties, are now in bloom. *H. perforatum*, the perforated-leaved St. John's Wort, is a common variety, abundant everywhere in woods and hedges, rearing its heads laden with rich yellow flowers, to a height of from two to three feet. It is readily known by having numerous small perforations or pores in its leaves, which are best seen when held up to the light. It was anciently thought to be a certain cure for wounds. We read—

> "Hypericum was there, the herb of war,
> Pierced through with wounds, and marked with many a scar."

It was therefore considered to cure by sympathy. *H. pulchrum* is another kind, of smaller growth and well deserving of its name, being delicately pretty; it is equalled by few plants in the abundance of its rich yellow blossoms, which are tipped slightly with red before expansion, and furnished with red anthers; it grows on dry banks and heaths. *H. calycinum*, the large-flowered St. John's Wort, is a very handsome plant, not often found in a wild state, but said to be a British plant, inhabiting bushy places, and very common in our gardens and shrubberies, where it makes a pretty object in the foreground. Coming into flower about St. John the Baptist's Day (June 24th), gave rise to the name by which these plants are commonly known, St. John's Wort.

Our ponds, lakes, and river-banks are at this time ornamented with the Bulrush, *Typha latifolia*, growing five, six, and seven feet in height, the flowering stems crowned with their brown clubs of hairs. The leaves all spring directly from the root, and are very long and narrow, presenting a noble appearance. The male flowers are alone accompanied by the club, the female ones, or anthers, being borne on a separate stalk in a yellow spike. In ditches we may now see the Teasels in bloom; *Dipsacus fullonum*, or Fuller's Teasel, is the most common, growing from three to four feet in height, bearing thick tapering heads of small pinkish purple flowers. The whole plant is covered with hooks and prickles. It is used in the preparation of cloth; for, as Bishop Mant observes—

"No skilful art a tool has planned,
To match that gift of nature's hand."

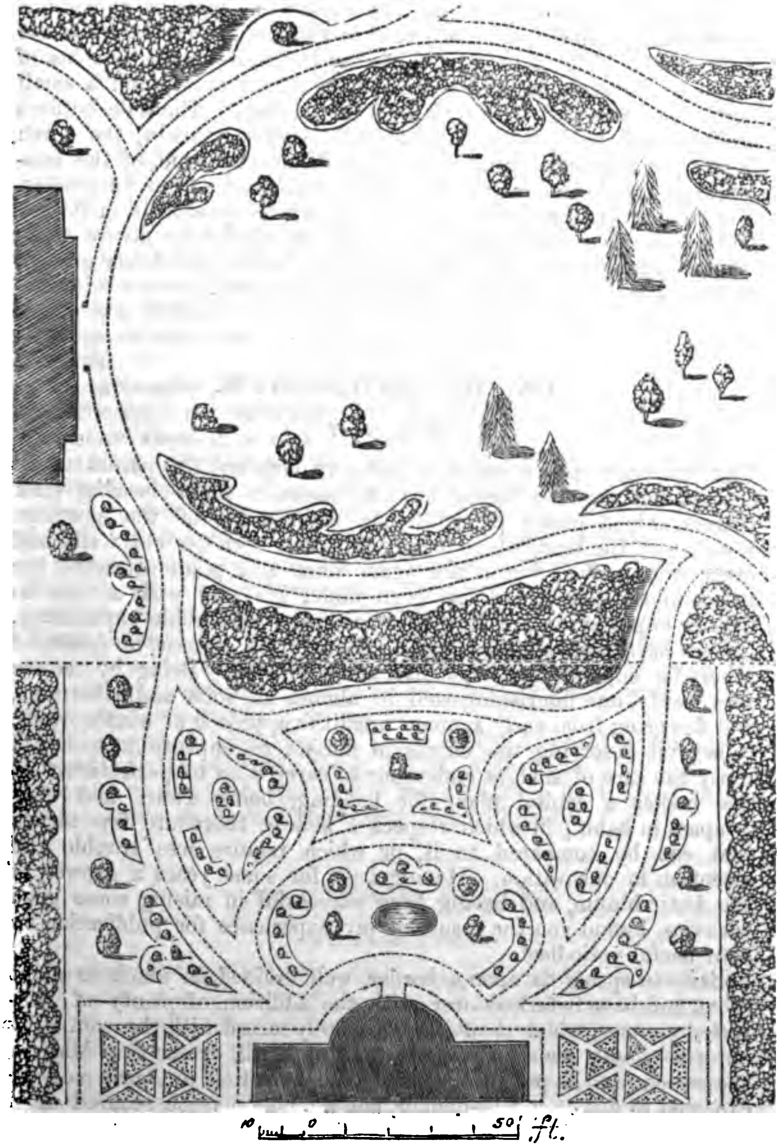
This is the season for our charming wild flowering Heaths, of which we have several species.

" Sometimes with bells like amethyst, and then
Paler, and shaded like a maiden's cheek
With gradual blushes; other while as white
As rime that hangs upon the frozen spray."

The most delicate English species is *Erica tetralix*, but it is far from abundant. The leaves are placed four in a whorl, and the flowers in round heads at the extremity of the stems, of a delicate blush, shading off to white. *Erica cinerea* is more common, and may be readily known by the leaves being placed three in a whorl, the flowers in long heads, bell-shaped, pink coloured, and rather smaller than the above species. Ling, or wild Heather, *Calluna vulgaris*, so prevalent on heaths and commons, is a beautiful plant; we may now behold our commons and hill-sides empurpled with its charming blossoms. It is very prevalent in the Highlands of Scotland, affording shelter and food to the numerous wild fowl of those districts.

DESIGN FOR THE FLOWER GARDEN AND GROUND OF A VILLA RESIDENCE.

BY T. RUTGER, ESQ.



The sketch here given presents the east front of a villa residence, with a small portion of the pleasure ground, and a flower garden. Objecting as some may, upon a general principle, to the flower garden being in front of the mansion, in places of considerable extent, the accompanying design is given to show what may be thought a more appropriate situation, where it is supposed to be placed on the south of the kitchen garden, that may be entered at both sides of the flower garden, in which there is a conservatory, and a small parterre at each end, with box or other edgings. The side borders are intended for choice deciduous and evergreen shrubs, the north border for Rhododendrons, etc.; the wall at each end of the conservatory for choice creepers, and the clumps on the grass for flowers. The pond for gold and silver fish may have a fountain in it, or it may be turned into a clump for flowers. There should be a wire fence made to pass through the shrubbery at the back of the flower garden, with entrance gates, to keep out rabbits, dogs, etc.

ON THE ANTIRRHINUM.

BY D. W. T.

The Antirrhinum is a native of our own country, the parent of all our garden varieties being the *A. majus*, a plant bearing pink flowers, which grows plentifully in some parts of the southern counties of England, where it may be often seen on old walls and other ruins. It is but a few years since this plant attracted the notice of the florist, and has been under his care with a view to further improvement, of which it possesses considerable capabilities, for we have already many good varieties, the earnest, no doubt, of others far superior in shape, size, and colouring. Being by nature very hardy, and flourishing well in almost all soils and situations, and flowering from early summer until the approach of winter frosts, it is well deserving the efforts of florists to improve it, and will repay the care of such as endeavour to carry it on to perfection. It also makes a capital plant for bedding, being dwarf and very compact in habit; in which respect I believe there are few things that can be compared to it, or which require less trouble and attention in cultivation. Having been for some years a grower of the Antirrhinum, and having been successful in raising some good varieties, I send you the result of my experience for publication in your useful periodical.

Early in spring fix upon a border, well drained, in which to plant them, and have it forked over, with the addition of plenty of well-rotted manure, which should be intimately mixed with the soil. Set out the young plants about the end of April, or early in May; a succession may be put in in June. Those planted in April may be expected to flower at midsummer, and a bloom may be secured until the approach of frost. They should be set out about eighteen inches apart in the beds; as they begin to grow nip off the tops, which will induce them to form compact bushy plants. In dry weather water them well. When in bloom, see that all flower-stalks are cut out as they begin to fall off, which will prevent the weakening effect of the plants running to seed; this exhausts the plants, and the latest blooms are inferior. Young plants flower best, those of a second season never blooming so well. To have early flowers, prepare the beds in the middle of September; put in the young plants, and pay attention to nipping out all flowers that appear, which will make them bushy, and stand over the winter better; early in spring they will come into bloom, and so long as they are prevented from seeding, they will flower for a length of time. In raising them from seed, I prefer to sow in pans or boxes, sparingly, placing them in a cool frame, where they will soon make nice little plants, fit for putting out in the border; or they may be sown on a warm border in August, in a soil that is fine and light. As soon as they are of a sufficient size place them out as above directed.

To propagate by cuttings, take off some of the smaller shoots from the sides, not more than three inches long, prick them in sand, and place them in a cool shady place, under a handlight, giving attention to watering, and they will speedily root; it is very seldom that such cuttings fail, and when they do, it is most frequently in consequence of their being allowed to remain too dry. The Antirrhinum will also do well grown in pots, especially if the latter be of a large size, I generally use eight-inch and upwards; the compost should be light, and rather rich. A good drainage is essential. To make nice bushy plants let them be frequently topped, and the side shoots pinched in. I have never found them make nice plants if grown in pots in-doors, for, unless plenty of air be admitted, they will be weakly and drawn up, flowering but poorly in consequence. All my best plants are out-of-door ones.

Trusting these hints may be found useful, I would add that the attention of lovers of this flower should, in my opinion, be paid more generally to obtaining size rather than marking, by the crossing of such varieties as produce the largest-formed blooms.

ON WINDOW PLANTS.

BY EXONIENSIS.

HAVING read the article by your correspondent, Mr. James Thompson, on the management of plants in windows and balconies, permit me, by way of addendum to his paper, to say a few words on a tribe of plants in which I am much interested, and which will, with proper management, be found well adapted for such a situation—I allude to the Cactus tribe. They possess a number of advantages over other house plants, among which I may enumerate that they require but little attention when out of flower, they make no litter of leaves, and are not very apt to become infested with insects. I believe there are no plants which require less attention from those who very frequently have little time to attend to their house favourites. Some of this tribe will afford a magnificent display of blossoms, and when properly treated will amply repay the slight attention which they demand. The ruination of window Cactuses is generally improper attention to watering them. In the tropical regions, where they are indigenous, they are often without a drop of moisture for a length of time together, whereas our uninformed window gardeners frequently make a practice of giving them a supply once a week the year round; need we wonder at hearing such complaints about "my Cactus does not flower." In Mexico, when, after the dry season, the rains set in, those withered, dry, coarse-looking Cactuses spring up with renewed vigour, and, as if by magic, are full of flower in a very short time. This is the plan pursued by nature, whose guiding hand we should endeavour to follow.

Most of your readers will know the old-fashioned Creeping Cactus, *Cactus flagelliformis*, with long tail-like shoots, of a pale green, covered with short spines, and which produces an abundance of pretty star-formed pink flowers; this is one of the best window plants. It may be grown in several ways, none better perhaps than placing it on a suspended board about the middle of the window, in a pot provided with a saucer, to prevent the dripping of the water given to it. It may also be trained to a light trellis, and thus treated it makes a very pretty object in a short time. I have sometimes seen it grafted, half a yard high, on plants of the genus *Pereskia*, such as *P. Bleo*, or *P. aculeata*, a Cactus nearly allied; it will then form a considerable head, the branches drooping down, and will flower freely. There are two other sorts which will do well grafted on the same species, namely, *Cactus truncatum* and *C. truncatum violaceum;* the former is a very handsome variety, producing large pink flowers from the sides of the stems, so much so as to overload them sometimes; the latter is also very handsome, the flowers of a deeper purple tinge, but not so free blooming as the former. Trained on a neat trellis, they are charming plants when in full bloom.

Besides the above there are several others of this tribe which do well in the window, such as *C. speciosa* and *speciosissima, Epiphyllum Ackermanii,* and many hybrid varieties raised from these; also several varieties of *Mammillaria, Aloe verrucosa,* and the Partridge-breasted Aloe. *Mesembryanthemums* are a serviceable class for the window, more especially *coccineum, aureum, muricatum, tigrinum,* and *dilatatum.* A favourite of mine, *Crassula coccinea,* will show abundance of its rich scarlet blossoms, almost too dazzling to look upon; and *Sempervivum arachnoideum,* in small pots, may be con-'dered a curiosity for the window, looking as if covered with a 'der's web. As before remarked, water must be withheld from them until their natural period of blooming approaches, when it may be given about once every ten days or a fortnight until they cease blooming, and they will be found to do well.

REVIEWS.

Rustic Adornments for Homes of Taste. By SHIRLEY HIBBERD.

(*Continued from page* 146.)

EVEN in town a goodly collection of the hardier sorts may be preserved, if every care be taken to give them a suitable soil and abundance of water. Any one passing Chadwell Street, Clerkenwell, may see in the area of a house but two doors from St. John Street, a very noble group of *Pteris* and *Lastrea* growing in a stone trough, and apparently left very much to shift for themselves, and to trust to the every-day weather for the supply of their wants. Yet these are not the most hardy of our *British Ferns*, and the handsome healthy appearance of the plants referred to will convince any grower of Ferns that a very goodly collection might be sustained in any moderately open districts of our most smoky towns.

Ferns artificially grown, and tended with proper care and skill, exceed very much the beauty of those grown by nature. True, we cannot grow the *scene* as well as the *Fern*—we cannot have the dark glen, the damp moss-grown cave, the decayed tree trunk, or the crumbling archway of the waterfall. The scenes amid which Ferns grow, the lovely secluded spots which they seek out—shy wood-sprites that they are—are the chief charms of the associations they always suggest to us; for they do haunt the greenest and coolest nooks, the most mossy and ancient banks above water-brooks that trickle from unseen founts, in the dark recesses of wild rocky caverns, and under the branching arms of twisted greybeard oaks and ancestral beeches—spots only discovered by the explorer of woodbine coverts and deep hidden shades, where, searching for rare beauty, he finds far excelling his anticipations, and checking his silent footsteps by sights that hold him breathless with surprise. Yet though we cannot have the mountain dells, and creeping thorns, and purple knolls of wild *thyme*, we may have the emblems of them in our little mural paradise—we may have the Ferns to suggest such things, and to keep alive the remembrance of pleasures and of scenes which keep a coolness in the brain and a freshness in the heart—breathings of fragrance from the green world, that sweeten the resting-places in the march of life.

Where a garden wall affords the necessary shade for one side of the Fernery, the rockwork should be so arranged that *in summer* a fourth part of the structure shall enjoy a full and deep shadow. The rockwork may either be adapted to its general configuration to the nature of the ground and the view we wish to obtain of it, or thrown up in a square or rounded outline, slanting upward from the base, and with a rugged or smooth surface, as may suit the taste of the planter.

The best material is dark rock or vitrified bricks, with some masses of grey limestone and granite, all sobered down in colour. The foundation should in some parts be of builders' rubbish, or a mixture of broken bricks, tiles, and old lime-rubbish, and in others a stratum of clay, on which the superstructure should rest. The builders' rubbish will ensure dryness for those plants which naturally grow on rocks, walls, and other aspects, where they are exposed to much light and little moisture, and these usually delight to have their roots in fissures of limestone, old mortar, or crumbling rock. The clay will serve to retain the moisture about the roots of the more amphibious kinds; the marshy species requiring as close an imitation of their natural soil as can be accomplished.

Those Ferns which grow beside waterfalls and in dripping caves require to have their fronds constantly wet, while others thrive best if kept comparatively dry. If a perforated pipe can be carried over one side, for the good of the water-sprites, such as *Scolopendrium*, *Osmunda regalis*, and others of similar habit, they may be kept constantly drenched; and without some provision of that sort many kinds cannot be grown at all.

The soil should be varied to suit the various habits of the plants, but for the general purposes of Fern-growing, a compost of old mortar, sandy earth, peat, and broken charcoal is best. Some kinds will require composts made expressly for them, which we shall indicate in the lists of Ferns for a Fern garden. In planting these, the crevices or holes into which they are to be set must be filled with the proper soil; but the root-stocks often penetrate to a great distance, beyond the range of the compost in which they were originally planted. A good supply of soft peaty earth, rotten wood, and leaf-mould is essential in Fern cultivation.

Where the cultivator would choose a still simpler plan, so as to avoid the necessity of preparing a special soil for some of his favourites, the whole may be built up with a foundation of sandy loam and old lime and brick rubbish, and afterwards made up with a compost of two parts of heath-mould, two of rotten leaves, and one of broken flower-pots in small pieces; most Ferns will thrive in such a compost, if kept moist. The exterior may be faced with rockwork, or may be smoothed round the sides at an angle of about forty-five degrees, and the summit made flat, or the form of a rounded hillock may be given it; care being taken to secure shade for at least one-third portion, and occasional sunshine only for the remainder, except on the south side, which may enjoy the full blaze of the summer's sun. Among the best Ferns for rockwork are the Polypodies, most of which under culture assume a greater beauty and duration of verdure than in their natural sites. The common Polypody may be known by its pale green elongated and lance-shaped fronds, in which the lobes are flat, oblong, and blunt pointed. At the back of the ripe frond the seeds or sori, a series of circular brown spots, will be found clustering thickly towards the extremity. This species is very common, and may be met with in damp hedgerows, and on the stumps and trunks of trees. It is a noble plant in rockwork, or among rustic work and tree stumps. It loves moisture, and will grow in almost any situation. When pending from the trunks and exposed roots of old trees, on deep shady banks, under which circumstances it is often seen naturally, it must be ranked as a decidedly ornamental object. We shall have to refer to this work on a future occasion, and in the meantime we repeat our recommendation of it to all those who take a pleasure in "rustic adornments for homes of taste."

A Dictionary of Botanical Terms. By the Rev. J. S. Henslow, M.A., Professor of Botany in the University of Cambridge. 12mo, pp. 218. London, Groombridge.

This Dictionary has been published at intervals, portions being appended successively to the monthly parts of *Maund's Botanist*, and *Botanic Garden*. It contains a copious list and explanation, illustrated by nearly two hundred woodcuts, of the Latin and English terms employed by botanical authors, both of the old and new school. Such a work as that now before us affords every student a ready reference to any term employed or to be met with in botanical authors, whether still in use or obsolete. It is certainly to the difficulties which the undue extension of our botanical nomenclature has thrown in the way of beginners, amounting to some two thousand terms, that so many are prevented from commencing, or turned aside from the study of systematic botany. To assist and to smoothen the way of students, this neat little work will be found invaluable.

GRAND FLORAL EXHIBITION, CRYSTAL PALACE.

The second great Floral Fête of the present season at the Crystal Palace was held on Wednesday and Thursday, the 25th and 26th of June, on which occasion £605 was awarded in prizes for plants and cut flowers, and £174 for fruit. The weather was very fine, and the total number of visitors on the two days was 27,875. On the whole, we consider the exhibition a very good one, and the arrangement of the plants, though different from the last show, was effective. In the great central transept was an immense circular stage, forty yards in circumference, five stages high, on which the larger collections of stove and greenhouse plants were arranged; on the top of all was placed a fine specimen of the Norfolk Island Pine, the whole forming a grand cone; right and left of this were stages of Ferns and Orchids.

Of collections of 20 stove and greenhouse plants, Mr. May, gardener to H. Colyer, Esq., Dartford, had the best, followed by Messrs. Veitch and Mr. Gedney, gardener to Mrs. Ellis, Hoddesdon. They comprised some noble examples of Heaths, Dipladenias, Pimelias, Clerodendrons, Allamandas, Ferns, Rondoletias, etc. Among the smaller collections of stove and greenhouse plants, Mr. Green, gardener to Sir E. Antrobus, Bart., Cheam, exhibited a specimen of *Gardenia Fortuni*, with abundance of its charming white blossoms, perfuming the air for a considerable distance with their fragrance, some good Allamandas, *Kalosanthes miniata*, and other well-grown plants. Mr. Carson, gardener to W. F. G. Farmer, Esq., some fine Aphelexises and Azaleas, among which *A. Gledstanesii* was very conspicuous, being quite a pyramid of bloom. Messrs. Veitch had a very fine collection of plants with variegated foliage, comprising *Arundo Donax*, *Dracæna Draco*, a fine *Livistonia Bourbonica*, *Aralia pulchra*, *Musa zebrina*, *Maranta Warscewiczii*, *Croton pictum*, the handsome rich-looking *Cissus discolor*, *Pandanus argenteus variegatus*, and in front a new variation on *Coleus Blumei*, named *pectinatus*, streaked and mottled with brown and jagged leaves; a variegated kind of *Yucca aloæfolia;* also a Hydrangea with green and white leaves. Messrs. Thomas Jackson and Son, of Kingston, had a good collection in this class also, containing *Solanum variegatum*, with large leaves, richly veined with crimson, *Aspidistra lurida*, and other fine plants. From Messrs. Lee, of Hammersmith, were *Caladium pictum bicolor*, *Begonia splendida*, some pretty Crotons and Marantas. Mr. Morris, gardener to C. Child, Esq., Bromley; Mr. Young, gardener to W. Stone, Esq., Dulwich; Mr. Parker, Paradise Nursery, Holloway; and Mr. P. Bassett, gardener to R. S. Holford, Esq., M.P., Weston Birt, exhibited other collections of this interesting class, which comprised many good specimens of variegated Sarracenias, Orchids, and Ferns.

Orchids were not very numerous, but good. Among large collections, the best was from Mr. Gedney, who furnished various Cattleyas, including *C. Harrisoniæ*, *Odontoglossum citrosmum*, *Calanthe Masuca*, *Epidendrum verrucosum*, and a handsome Bearded Cypripedium. Mr. Woolley sent *Stanhopea tigrina*, Sobralias, Phalænopsis, Aerides, Cypripediums, and Lycastes. Messrs. Veitch obtained a first prize for a beautiful collection of twenty plants; among which were, *Anguloa Ruckeri*, with two large brown-spotted orange blossoms, *Oncidium pulvinatum* and *phymatochilum*, *Aerides Lobbi*, a capital plant of *Cypripedium barbatum*, *Lælia pupurata* (an extremely fine species, with large white flowers and purple lip), *Vanda tricolor* and *suavis*, *Saccolabium guttatum* and *Blumei*, *Odontoglossum hastilabium*, the pinkish-lilac *Barkeria Lindleyana*, several Cattleyas, the best variety of *Odontoglossum grande*, and the handsome *Cypripedium barbatum superbum*, having flowers streaked and mottled with brown. Of Orchids, in collections of twelve, Mr. Bassett had some pretty plants, consisting of Aerides, Cattleyas, Cypripediums, and Dendrobes. From Mr. Clarke also came a group both well grown and flowered.

Among Variegated Orchids, were *Physurus argenteus* and *pictus*, and *Anæctochilus setaceus*, *intermedius*, *xanthophyllus*, and *Lowi*, exhibited by Messrs. Veitch and Mr. Woolley.

Pitcher plants were well shown by Messrs. Veitch, who contributed *Nepenthes lævis*, *sanguinea*, *Rafflesiana*, *lanata*, *ampullacea*, and *phyllamphora*. A group of similar kinds was also shown by Mr. Gedney.

There were some beautiful collections of Ferns, the best of which was from Mr. Fletcher, gardener to Dr. Young, of Kennington. It consisted of *Polypodium spectabile*, *Nephrolepis Davallioides*, *Lomaria magellanica*, and *discolor*, *Alsophila Colensoi*, *Asplenium Belangeri*, *Platycerium grande* and *alcicorne*, *Gymnogramma lanatum*, two small-leaved Gleichenias, and *Davallia tenuifolia*. Messrs. Veitch also had fine plants of *Platycerium alcicorne* and *grande*, *Davallia solida*, *Gleichenia microphylla*, *Dicksonia antarctica*, three Adiantums, the pretty *Gymnogramma ochracea*, *Thyrsopteris elegans* (a very handsome kind), *Neotopteris vulgaris*, and a Davallia. Mr. Cutbush, of Barnet, also exhibited a group of well-grown Ferns, among which was a fine plant of *Gymnogramma ochraceum*. Mr. Sim, of Foot's Cray, showed sixty British specimens, among which were some remarkably fine ones.

Of Lycopods, Messrs. Bassett and Cutbush had well-grown plants of *viticulosum*, *Galeotti*, *inequalifolium*, *uncinatum*, *umbrosum*, *Wildenovi*, and the small *apodum* and *lepidophyllum*.

A collection of tall-growing Cacti, in good condition, were shown by Mr. Green, and contained *Epiphyllum aurantiacum*, *speciosum coccineum*, the beautiful rosy pink variety of *speciosum* called *elegans*, and other well-known sorts.

A considerable number of Cape Heaths were exhibited by Messrs. Williams, Roser, Peed, May, Cutbush, Jackson, and others, comprising good plants of *Shannoni*, *oblata*, *Savilleana*, *Westphalingia*, *gemmifera*, *Massoni*, *florida*, *odorata*, *ventricosa*, *magnifica*, *elegans*, and different varieties of *tricolor*.

Of Azaleas there were not many, and such as were exhibited were getting past their best. Roses were exhibited by Messrs. Lane, Paul, Francis, Wilkinson, Hollamby, and other growers. Among the best we may notice the following, which were very fine:—Juno, H. C., delicate shaded rose; General Jacquinot, H. C., purple-crimson, large; Mrs. Bosanquet, C., delicate creamy flesh; Narcisse, T., sulphur-white; Duchess of Sutherland, H. P., rosy blush, large; Boula de Nanteuil, G., large, purple-crimson; Princesse de Lamballe, A., snowy white; Géant des Batailles, H. P., vivid crimson; Frederick II., H. B., purple-maroon; Gloire de Dijon, T., fine, creamy sulphur; William Griffiths, H. P., pale bright lilac, fine form; Miss Hargrave, C., single, yellow and crimson, distinct; Devoniensis, T., delicate pale sulphur; Fulgens, H. C., vivid crimson-scarlet; Belle Marie, H. C., beautiful deep pink; Yellow China, C.; Chenédolé, H. C., large, vivid crimson; Louise Peyronny, H. P., bright pink, large and beautiful; Blairii, No. 2, H. C., splendid bright rose; Solfaterre, N., large, bright sulphur; Paul Ricaut, H. B., bright crimson, large and full; Auguste Guinnoisseau, H. P., deep red, large and new; Coupe d'Hebe, H. B., large, bright pink; Smith's Yellow, N., beautiful pale yellow; Baronne de Kermont, H. P., fine rosy pink, new Gloire de Rosamene, B., large, vivid crimson-scarlet; Madame Plantier, H. C., pure white, in large clusters; Duke of Devonshire, H. C., striped, fine; Souvenir de la Malmaison, B., very large, creamy flesh; Chipetowzikoff, H. P., deep crimson, new and distinct, fine; Magna Rosea, H. B., fine light blush, very large and double.

There was a large display of Pelargoniums, the only collections, however, of first-rate merit were those of Mr. Turner, followed by Messrs. Dobson. The best fancy Pelargoniums were also from Mr. Turner, and Messrs. J. and J. Fraser second. The following is a description of the new Pelargoniums of 1855—6. Those which obtained first prizes were Spotted Gem (Turner), upper petal rich high colour, with a small spot of maroon, lower the same, white centre; Prince of Prussia (Turner), upper petal a large blotch of crimson-maroon, shaded off to carmine, lower crimson-scarlet, a stout flower, good form and large, the nearest approach to a scarlet. Second prizes were awarded to Conspicuum, upper petal a black blotch, shaded off to lilac-rose, lower rose with a black spot, good truss and form; King of Scarlets (Turner), orange-scarlet, upper petal with a small maroon blotch, free and large; Viola (Hoyle), upper petal purple-maroon, with a narrow edge of lilac, lower blush lilac, white centre, stout flower, fine truss and form; Matilda (Hoyle), upper petal carmine edged with rose, lower clear rose with white centre, good substance. A third prize was awarded to Miss Foster (Turner), upper petal crimson-maroon edged with carmine, lower bright rosy crimson, white eye, very free bloomer.

The following did not obtain prizes, but our description may be relied on by purchasers. Agnes (Hoyle), clear rose, upper petal with a large maroon blotch, shaded off to carmine, lower clear rose, white centre, a stout flower, good form; Queen of Fairies (Turner), blush, upper petal with a maroon blotch, lower with a small carmine spot, good form and stout flower; Standard (Hoyle), upper petal crimson edged with rose, lower rose, with white centre, stout flower of second-rate form; Eclipse (Dobson), upper petal deep crimson edged with rose, lower clear rose, white centre, large and stout, good form; Ardens (Dobson), scarlet-crimson, upper petal having a small black blotch, size rather small; Compactum (Dobson), upper petal crimson blotch, shaded off to rosy carmine, lower rosy purple, white centre, stout flower, not of first-rate form; British Queen (Dobson), upper petal crimson-maroon, a narrow edge of red, lower clear rose, mottled and veined, white centre, second-rate in form; Cardinal (Dobson), orange-scarlet, upper petal having a deep maroon blotch; Alexander (Dobson), upper petal maroon-crimson edged with carmine, lower carmine, with maroon spot and distinct veins, not first-rate, but showy; Sunset (Beck), very like Cardinal in colour and form; Amethyst (Dobson), upper petal maroon, with a narrow edge of crimson, lower clear rosy purple, light centre, stout flower, and good shape. Messrs. Veitch exhibited a new bedding Geranium, named

Quercifolium floribundum, a free bloomer, with large trusses of pinkish purple flowers, of compact habit. Mr. Kinghorn, of Richmond, exhibited some good varieties also.

Amongst New Plants the following are well worthy of notice. *Kalmia latifolia picta*, a great improvement in the old variety, the flowers being larger, brighter flesh colour, with dark markings, and the unexpanded buds a deeper rose; the plant exhibited by Messrs. Veitch, a foot and a half high, was covered with blossoms. From the same firm were also *Wartzia aurea*, an annual a foot high, flowers golden yellow, like a Helichrysum, a free bloomer. Rhododendron Princess Royal, flowers salmon-rose, tubular, two inches in length, the foliage resembling that of *R. Javanicum*. *Lapageria rosea*, of this a fine specimen was shown, trained on a parasol trellis, exhibiting its splendid blossoms beneath, of which upwards of twenty were out; it is one of the finest greenhouse climbers. *Aerides*, a species from India, the petals and sepals white, spotted with purple, lip bright purple, two inches across. *Hoya longifolia*, a native of the East Indies, flowers creamy white, having a pink centre, the leaves four inches long, and not more than half an inch wide; also a species of the same genus from Japan, with large flowers, resembling *H. carnosa*, but considerably larger. *Thibaudia*, an unnamed species, the flowers creamy blush, veined with brownish crimson, which are produced from the old wood three or four together, the tube an inch and a half in length, and three quarters in diameter. *Aralia Japonica* and *Ouvirandra fenestralis* were also exhibited, not in bloom. *Myrtus microphylla*, with foliage much resembling that of *Boronia serrulata*, and *Rhopala Jonghi*, with handsome foliage of considerable size. A pretty species of *Capsicum* from Peru, was shown covered with fruit, small, conical, bright clear yellow, very showy. *Leptodactylon Californicum*, from South California, foliage and habit somewhat resembling *Roellia ciliata;* the plants exhibited were about six inches high, flowers terminal, of five petals, two inches diameter, light rose tinged with lilac, having a very large white centre; this will be found to be *one of the most beautiful of our greenhouse shrubs.* A specimen of *Gesneria Donckelaari*, a foot and a half high, had a spike of its pretty blooms a foot in height. *Soneralia margaritacea*, with pretty bright green foliage spotted with white, of trailing habit. Several small plants of *Philesia buxifolia*, about six inches high, each bearing four or five of its beautiful flowers (of which a very accurate figure was given in *The Gardener's and Naturalist's Almanack,* for 1854), Also two or three new *Ixoras*, specimens of *Wellingtonia gigantea*, a foot and a half high, and *Begonia Thwaitesii*, with handsome brown foliage, having blotches of dull green.

Mr. Glendinning showed *Erica Spenceriana*, a hybrid between *depressa* and *hybrida*, the flowers free, dull rose, with a lighter mouth, an inch and a half long. *Erica eximia superba*, flowers glutinous, tubular, an inch and a half long, salmon-rose at the base, midway white, and green mouth. *Rhamnus*, a species producing a celebrated

Chinese green dye. *Citrus*, species, a new Orange from the north of China, considered hardy; it is of singular habit and foliage, very unlike this tribe, the leaves somewhat resembling those of *Jasminum nudiflorum*. *Abies Kæmpferi*, a new Larch, from the north of China also, said to grow 150 feet high, and is perfectly hardy; its foliage is very fine.

Of Pinks, Ranunculuses, Irises, Pansies, and Pœonies, there were some stands from Messrs. Tyso, Salter, and others, of which lists will be given in an early number of the *Cabinet*.

NOTES ON NEW AND SELECT PLANTS.

137. PTERIS HETEROPHYLLA. Nat. Ord. *Filices*.—Mr. Wilson, of the Jamaica Botanic Gardens, recently sent this Fern to Kew. It was gathered in the moist woods of Westmoreland County, in the island of Jamaica. It is not an abundant species, but was detected by Sir Hans Sloane (who named it *Ruta muraria major*) in the locality of the Rio d'Oro and Orange River, in the interior of the country. Though not often met with by botanical collectors, it has been observed in St. Domingo, Cuba, and Rio Janeiro. It is a distinct and rather pretty species, somewhat resembling a tall variety of the Wall Fern, *Ruta muraria*. (*Bot. Mag.*, 4925.)

138. RHODODENDRON HOOKERI. Nat. Ord. *Ericeæ*.—Introduced by Mr. Booth from Bootan, where it grows along with *R. eximium*, forming entire thickets, upon the Oola Mountain, on the north slopes of the Pass of Lablunga, accompanied by *Pinus excelsa*, at an elevation of from 8000 to 9000 feet above the sea; "frost and snow," says Mr. Booth, "being very severe and continuous in this locality." It is a tall, upright-growing shrub, attaining from twelve to fourteen feet in height on its native mountains; the flowers are about the same size as those of *R. Thomsoni*, to which the present species appears allied, of a bright crimson, about an inch and a half long, and one inch across the mouth; the branches are clothed with a pale buff polished bark; the foliage is very thick and smooth, from three to six inches in length, and during winter much curved back, the edges nearly meeting the midrib at that season. (*Bot. Mag.*, 4926.)

139. COLLINSIA VERNA. Nat. Ord. *Scrophularineæ*.—An annual of recent introduction, a native of Kentucky and the western interior of North America. It is a plant of singular beauty, and will, no doubt, become very popular, and prove a charming bedding-out species. It grows from nine to twelve inches high, erect, and bears a profuse succession of flowers, the upper lip of the corolla being pure white, and the lower one azure blue, with white rays, under side pink. (*Bot. Mag.*, 4927.)

140. RHODODENDRON CAMPANULATUM; var. WALLICHII. Nat. Ord. *Ericeæ*.—Plants of this lovely variety have been raised at Kew, from seed received from Sikkim, which bloomed in the month of

May last. The flowers are about two inches and a half across the mouth, white throated, shading off to pale lilac-purple towards the margin of the corolla; the foliage is of medium size, dark green, with the petioles and scales of the leaf-buds of a dark red colour. (*Bot. Mag.*, 4928.)

141. R. Falconeri.—Another of the beautiful Himalayan Rhododendrons which have bloomed this year for the first time. The present species has been flowered by Messrs. Standish and Noble, of Bagshot, in an open frame, merely protected at night by a mat; also with Mr. Fairie, near Liverpool. It is a very striking species, not only from the colour and size of its heads of flowers, but also from the magnificence of its foliage. It grows on the summit of the Tonglo Mountain, in Sikkim—Himalaya, at an elevation of 10,000 feet. The flowers are produced in large heads, pale sulphur-yellow, broadly bell-shaped, upwards of two inches across the mouth; the leaves are from eight to ten inches long, about four inches across, dark green, and beneath ochreous; leafstalks pale green, somewhat woolly. (*Bot. Mag.*, 4924.)

QUESTIONS, ANSWERS, AND REMARKS.

Mandevillea suaveolens.—Will this plant bloom in a cool greenhouse? I have one which has lived through the winter, and made some shoots this spring, but is always covered with green fly.—*Martin P.* [A strong infusion of chamomile or tobacco water, sprinkled liberally over and underneath the foliage, or suffocate by smoke, will readily kill the insects, and the plant may easily be kept free in future. Stop them at first appearance. The Mandevillea will bloom freely in a warm greenhouse.—*Editor.*]

Clematis Sieboldi.—*Florista* will feel obliged to any of the numerous readers of the *Floricultural Cabinet*, who will inform her of the most successful method of growing and flowering this charming plant.

Rhododendrons.—I shall esteem it a favour if you or any correspondent will let me know, through the medium of your Magazine, what is the best time of the year for cutting down large Rhododendrons. I have some eight to ten feet high, which look old and unsightly; I should feel sorry to spoil them by unskilful treatment, and shall be obliged by a reply.—*Juvenis.* [The best time for performing the operation is in spring, when they are about to push their shoots; the young wood that is produced has then a season to get ripened in, and is often vigorous; if cut late in summer, the shoots, being tender, are often destroyed by a severe winter, and the old plant is in danger from it; when performed at the time advised success will follow.—*Editor.*]

On Composts suitable for growing Florists' Flowers.—Having often experienced the inconvenience of being obliged to refer from one book to another for a description of the composts suitable for different flowers, I have collected some of the most approved together, thinking they might be useful to many of your readers. I send them for your insertion. *Carnations:* 1. Two-thirds fresh loam; one-third rotten frame-dung, with a little sand. 2. One-half loam; one-half rotten frame-dung, with a little sand. 3. Five-sixths of No. 1 or No. 2; one-sixth leaf-mould, good for Picotees. 4. One-third loam; one-third peat; one-third two-year-old cow-dung. *Ranunculuses and Anemones:* Two-thirds loam; one-third rotten cow-dung. *Dahlias and Narcissus:* Loam well manured. *Hyacinths:* 1. One-third sea or river sand; one-third loam; one-fourth rotten cow-dung; one-twelfth leaf-mould. 2. Two-sixths grey sand; two-sixths well-rotted cow-dung; one-sixth tanners' bark, quite rotted; one-sixth tree leaves, well rotted. *Pinks:* Two-thirds loam; one-third two-year-old cow-dung. *Tulips:*

Good sound loam. *Auriculas:* 1. One barrowful of loam; one barrowful of leaf-mould; one barrowful of old frame-dung; one barrowful of two-year-old cow-dung; one peck of river sand. 2. Two barrowfuls of sandy loam; one barrowful of leaf-mould; one barrowful of two-year-old cow-dung. 3. One-half rotten cow-dung; one-sixth loam; one-eighth leaf-mould; one-twelfth sand; one-twenty-fourth decayed willow wood; one-twenty-fourth peat; one-twenty-fourth ashes of burnt vegetables. *Polyanthuses:* 1. One barrowful of sandy loam; one peck of leaf-mould; one peck of old cow-dung. 2. One barrowful of well-rotted cow-dung, or leaf-mould; one-half barrowful of white sand; two barrowfuls of good loam. *Heartsease:* Three barrowfuls of fresh loam; one barrowful of one-year-old horse-dung; one peck of sand.—D. Pearce, *Wakefield.*

Dioscorea Batatas.—I beg leave to offer a few remarks on the subject of the *Yam*, or *Dioscorea Batatas.* I went to sea, and happened to touch at Ceylon, where the captain had ten bushels of it brought on board for the voyage home. The bulbs weighed about 2 lbs. each; when cut in half, a sort of milk ran from them. The largest were nearly as hard as the root of some trees; the small ones, about the size of a walnut, are curried by the natives, and are very good; but when they are larger and have been out of the ground a month, they are, when cooked, floury, tasteless, and a person gets tired of them in a very short time. They will never supersede the potato, in my opinion. I brought some home, having had them planted nearly six months, in thirty-two-sized pots; in three months they yielded three tubers each, about as large as a goose's egg; which when cooked my friends thought were beautiful at first, but after eating them three or four times, they said they would rather have potatoes without animal food, than yams with it. I also brought some sweet potatoes home from the Isle of France, but they were rotten. I hope this will appear before the public, as I am assured that if they are grown largely in England, it will only be to fatten pigs with; they will be very useful in that way.—*A Reader of your Journal, and a Sailor.*

Appearance of Leaves examined with a Microscope.—The back side of a rose-tree leaf but especially that of a sweet briar, appears to be diapered most excellently with silver. The back side of the leaf of English mercury seems as it though were rough cast with silver, and the ribs appear to be stuck full of round, white, transparent balls, like innumerable grapes or oak-apples, or a bracelet of crystal with footstalks, by which they are fastened to the ribs and fibres of the leaf. A leaf of rue seems to be full of holes like a honeycomb; a sage leaf is like a white rug or shag, full of knots tasselled with white silver thrums, having one or two fine round crystal beads or pendants, as big as peas, fastened to every knot. Look at the back side of a nettle leaf, and you will see it full of needles, or rather long sharp transparent pikes, every needle having a crystal pommel, presenting the appearance of a sword-cutler's shop, full of glittering drawn swords, tucks, and daggers. Of a similar appearance are the prickles of borage leaves and stalks.—*Field Nat. Magazine.*

Chorozemas.—This tribe is generally considered by amateurs difficult to cultivate; but they can be grown well by pursuing the following method. The soil should be a sandy peat, well broken with the spade, but not sifted. The best time for potting is March or April. Care must be taken not to over-pot the plants, or injure the roots while potting; the soil must be made very firm and compact about the roots, and the pots well drained; then they should be placed in the greenhouse in an airy situation, and not crowded among other plants. It is also well to keep them in the greenhouse during summer; but in hot weather they should be shaded for two or three hours each day during sunshine. They require a reasonable supply of water; that is, they must not be sodden, nor left too dry. They may be propagated in the following manner: the cuttings should be taken off and carefully prepared while the wood is young; take off the bottom leaves with a sharp knife, and make a clean cut horizontally just through the joint; the cutting-pot should be drained, and then filled to within an inch of the top with the soil above mentioned; on the top of this put a layer of white sand, into which put the cuttings, making a hole for their reception with a small stick. When the pot is full, give them a little water with a fine rose; after which, place a clean glass over them: in this state they may be removed to the propagating house, where the temperature should be 70 degrees. They should be shaded from the sun, which can be done by placing a sheet of coarse paper over the glasses. As soon as the cuttings are rooted, which may be known by their appearance of growth, they must be potted off; but care must be taken not to injure the roots, and they must be shaded again for a week or ten days, until they make fresh ones; they must then be gradually hardened, and placed with the old plants in the greenhouse.—*Alpha* (*Gard. Chron.*)

OXALIS FLORIBUNDA.—Were I desired to select the most picturesque plant, yielding a long-continued and profuse crop of flowers without artificial attention to its after-growth, I should without hesitation fix upon this. It is a dwarf, tuberous, herbaceous plant, rising from two to four inches in height, each plant forming a terminal crown of leaves (similar to a small-growing Clover), from the centre of which arises a profusion of bright rose-coloured flowers, continuing in succession from June until September. The principal precaution required for its successful management consists in adapting the soil to the tuberous structure of its roots, which differ from most others in their thick, fleshy, unbranched form, capable of absorbing an excessive amount of fluid, beyond what is required for the support of the simple crown of leaves upon their summit. As a general rule, the amount of soil, and the nutritive properties which it contains (when applied to plants), should always bear a strict relation to the extent of growth which they are capable of maturing during the current year. Every degree beyond this is an evil, which lessens the vital energy of their organs. To induce fertility in the plant, an artificial soil should be prepared in equal portions of old light garden-loam, heath-mould, and well-washed river or silver sand, and well incorporated with finely broken brick refuse, equal to one-third of the whole amount. Thus treated it forms a very beautiful object, either for edging or in the parterre, and when seen expanding its bright blossoms for successive weeks, it appears as one of the few objects of which it may be remarked that it has "few equals, and no superiors." In common with some others, this interesting plant is much degenerated by the inferior varieties from seed, which have almost supplanted the original species, the former being much less compact in their growth, and less brilliant in their flowers. The latter is known by its leaves being not more than from two to three inches in length, and by its flowers being uniformly circular, and firm in their texture, varying from bright to darker shades of rose colour, and, when found in favourable situations, the profusion of bloom almost covers the foliage.—*W. Wood.*

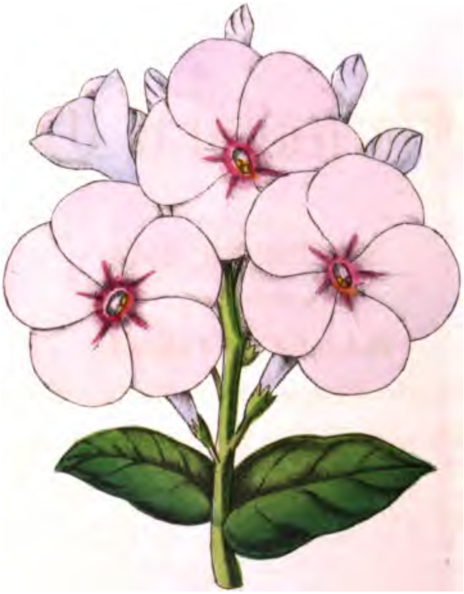
PROPAGATION OF THE ANEMONE JAPONICA.—If a root of this plant be taken from the ground, after flowering, it will be found to resemble brown cord, divided into a great number of ramifications. Upon its surface will be perceived a great multitude of little white conical projections, sometimes growing singly, sometimes springing up in clusters, and occasionally producing scales on their sides. They are young buds, every one of which, if cut from the parent, will grow, and form a strong young plant in a few weeks. These buds are not confined to the main trunk of the root, but extend even towards its extremities, so that every fragment of the plant is reproductive. Such being the case, he who possesses an *Anemone Japonica*, has nothing to do but turn it out of its pot, when at rest, clean its roots, chop them into pieces about half an inch long, and then place them in some light fibrous soil, near the surface, in a gentle hotbed, and in a few weeks he will have as many healthy young plants as he may have chopped the root into pieces. Such is the wonderful power of reproduction in this plant, to which, indeed, we have few parallels.—*G. C.*

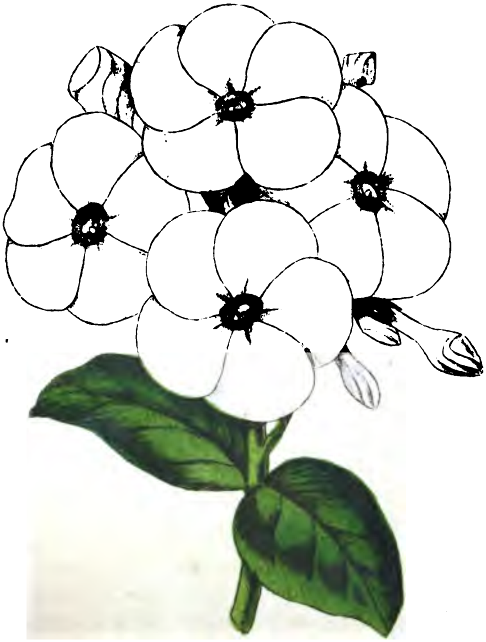
ON SUPPORTING PLANTS BY STAKES.—Primary importance must be attached to the time at which support of any kind is to be afforded. The principal evils to be corrected in the methods at present pursued are staking plants at too late a period, and doing it with unsuitable materials, or in a slovenly way. If a specimen be not early staked, however neatly this operation may be afterwards performed, it will ever betray the neglect from which it has suffered, and can very rarely be brought into the required position. Beyond this, there is the danger of being broken or injured from wind and other causes, to which it is exposed prior to staking, and the fact that it is not necessary for stakes, when timeously applied, to be so strong; when, by consequence, they are not rendered so prominent or perceptible. Let a plant be staked while it is small or young, and its appearance will remain as natural as if it had not been staked at all; but wait till it has begun to straggle, and no subsequent care will suffice to relieve it of the constrained unnatural aspect it must then be made to wear. Whatever material be employed for supporting plants, the chief object should be to conceal the stakes; and hence they ought to be as straight and free from projecting parts as possible, and as short and slender as comports with the purpose for which they are designed. Crooked stakes, those which have irregular and broken branches, such as are unnecessarily stout or tall, and stakes made of a soft pliable wood, or having too rugged an exterior, are exceedingly unfit for ornamental uses in the case of erect-growing species. The most proper are those which are smooth, straight, free from irregularities, just strong enough to effect their object, and so long as to reach only within a few inches of the top of the specimen, or as high as support may be needed. There are likewise many objections to the ordinary modes of applying stakes, or fastening plants to them. It is wrong to place the stake between the plant and the path from which it is looked at; for the object that ought to be hidden is thus made most conspicuous. It is improper to thrust the stake into the earth near the stem of the plant, particularly if it be a tuberous-rooted or bulbous species; since much damage may be done to the specimen, and probably some of its main roots and sources of sustenance be cut off thereby. For the same reason, it is equally erroneous to use a stick that is not prepared with a long smooth tapering point, or has any considerable asperities on the portion that is to enter the ground.—*M. S.*

CHINESE GARDENING.—The Chinese, with that practical application of facts to purposes of utility which so pre-eminently distinguishes them as a nation, have availed themselves of some of these features in their landscape gardening. To convey the appearance of distance, trees of the loftiest and largest growth, with foliage of the deepest green, are selected for the foreground. Others of smaller stature and more subdued shades are placed in the distance; whilst to vary the surface and increase the apparent extent, groups of suitable trees, selected also with a due regard to the influence of the seasons, are judiciously scattered about. To aid the effects produced by vegetation, representations of old ruins, receding walls, and timeworn rockwork are all made available.—*Hinds, in Annals of Natural History.*

ON MAKING NEW LAWNS.—There is a good deal more in the operation of forming a nice velvety lawn, than the ordinary method adopted of cutting irregular "sods," and as irregularly laying them down again, would warrant a person in believing. The piece of ground intended to be turfed, should be ploughed or spaded over pretty deep, and brought to a good surface by harrowing, removing all roots of perennial weeds likely to grow if left in the soil. The ground should be levelled and graded so smooth that a tightly stretched garden line will show no hills or hollows of importance; except the character of the situation be a wavy one, when the eye must determine its undulations. All stones should be carefully cleared off. Select a spot for cutting the turf as free from strong grasses and weeds as possible—land that has been grazed off pretty close as waste land is the best. Take what is called an edging iron or other sharp instrument, and mark the turf into strips three feet long and one broad, holding the handle perpendicularly, and cutting two or three inches deep. Then take the turfing-iron if obtainable—if not, a very sharp spade, and cut up this turf one inch and a half deep, rolling each one up separate, as you would a piece of oilcloth. Commence laying the turf at one end, putting down the part to the left hand, and unroll to the right, being careful to keep all the edges close together, and the work square, which it will be if the turf is taken up properly. Go over the whole with a turf-beater—a flat piece of wood with an auger hole bored in it, to receive the handle; edge out the borders and walks, and occasionally pass over a heavy roller, and you have a smooth and level surface. Providing the space is large, and turf difficult to be got, the whole may be levelled as directed, being very careful to kill all weeds, and the following grass seeds sown, which in time will form a good sward, but looks naked at first:—Red-top, *Agrostis vulgaris*, and white clover, *rifolium repens*, in the proportion of three-fourths red-top to one of clover. Sow at ast three bushels to the acre of the red-top, as the object is to get a thick verdure.—*. S. T.*

STOCK SEED.—When the plants are in bloom look them over, and mark all flowers n the single plants that have five, six, or seven petals, by tying a piece of coloured orsted on the footstalks of the flower. When the seed is ripe, preserve the pods thus marked by themselves. The plants produced from this seed will be found to contain, eight out of every ten, double flowers.—T. W. WHITE, *Leek.*





DOCTOR LEROY

MADAME FONTAINE

The Floricultural Cabinet.

SEPTEMBER, 1856.

ILLUSTRATIONS.

PHLOX, *var.* DOCTOR LEROY, MADAME FONTAINE.

THE two new Phloxes which we figure are continental varieties, of great excellence, being very distinct in colour, as well as of good form and habit. We are pleased to remark that our friends in France are turning their attention to this pretty tribe, and, from what we have seen of French hybrids, we entertain no doubt that they will improve on all the kinds at present in cultivation. Phloxes constitute an elegant genus, generally very free blooming, and are the more valuable from their lively flowers being produced, in succession, from April or May until the appearance of winter, and no flower garden should be without a selection. When grown in masses, the taller varieties in the centre of the bed, they are very showy; and indeed all the varieties are worthy of cultivation. The soil which suits them is a good strong loam, well enriched with manure, on a dry subsoil. Cuttings strike readily in sand, either in pots or in the open border, under hand-glasses, in a shady situation. The following is a list of some of the best new varieties at present in cultivation:—Doctor Leroy, dark rosy crimson, distinct eye, a fine trusser, growing three feet high. Madame Fontaine; this is one of the most beautiful, the form excellent, a pure white, having a distinct clear carmine eye, habit dwarf and compact, the truss of flowers of great depth and pyramidal form. Lychniflora, deep rosy crimson, ruby centre, good form and compact dwarf habit. Madame Deslandes, rosy peach, eye deep crimson, height three feet. Madame Marmod, white, shaded and pencilled pale crimson. Madame Rendatler, white, with a clear pink eye, very large trusses of bloom, dwarf habit. Pauline Deffaut, white, with deep crimson eye, very good form. Mademoiselle Albertine, delicate rosy lilac, white eye, dwarf. Mademoiselle Henderson, white, with a deep violet eye, very large trusser, three feet high. Rêve d'Amour, peach, bright carmine eye, very fine and distinct, medium height. Omniflora compacta; this is a very dwarf white-flowered variety, and, in consequence of its compact and free-flowering habit, is one of the best Phloxes for bedding purposes.

REMARKS ON THE TREATMENT OF THE RANUNCULUS.

BY MR. WILLIAM GRIGOR, SPONDON.

THE flowers of all plants in an uncultivated state being single, the circumstance of more than the natural number of petals being produced in cultivation is, I think, to be attributed to the greater quantity of nourishment afforded them than nature has provided. To grow double flowers in perfection therefore, it is obvious that they ought to be supplied with as much of the richest nourishment as they are possibly capable of receiving, provided this can be done without injuring the health of the plant. In the case of the Ranunculus, if the necessary quantity of manure be applied without precautions being taken to keep the tubers from coming in contact with it, however well reduced and incorporated with the soil it may be, there is considerable risk of their becoming diseased, particularly of being attacked by a small whitish insect that abounds among all richly manured soils. To guard against this, I adopted the following method, which has been found to answer exceedingly well, the bloom produced being such as not easily to be surpassed:—After the roots are lifted, the bed is dug over fully 18 in. deep; the mould all along the surface is then removed to the depth of about 4 in., and its place filled up with a mixture of short horse and cow-dung, not more reduced than is necessary to make it fall easily in the working. This is turned very lightly down, barely covering it: it is again turned over in October, and well mixed with the mould, taking care to keep the manure near the surface, as the lower stratum will be sufficiently enriched with what is washed down by the winter rains. It is then raked quite level, and lies in this state till the time of planting, which should be as early in February as possible. The bed will then have sunk down considerably. To meet this, a quantity of rich fresh loam is laid up in autumn under a shed, or where well defended from rain. As much of this dry earth is now spread over it as raises it exactly 2 in. from the intended height. The roots are then placed on the surface in squares of 3½ in. or 4 in., a little sea sand spread over them, and then covered up with dry earth, taking particular care not to bury them deeper than 2 in. from the *bottom* of the tubers. They are thus kept quite separate from the manure, while, by having it so closely under them, they derive as much nourishment as if it had been mixed with the whole soil. This method also combines the advantages of a dry bed and early planting, both of which are so essential to obtaining a fine and general bloom, and which cannot ordinarily be obtained except in such situations as are so very dry as to be unfit for the Ranunculus. The temperature of the earth in which they are planted being considerably higher than that of the open ground, from having been kept sheltered and dry, germination will sooner take place, and the risk of injury from frost be also considerably diminished. Nor is the trouble attending this method more in the end than that encountered in the ordinary way; being partially renewed every year, the bed will never require to be wholly changed, as is usual, every few years.

FLORICULTURAL REMINISCENCES.

BY T. RUTGER, ESQ., DEVONPORT.

In a former number of the *Cabinet* (see November, 1855) I adverted to the improvements which have been made and which are still making in the culture of flowers. The *Cabinet* from its commencement having been principally devoted to this subject, a fund of information has been given to its subscribers, and as most of the articles supplied have been intended for practical purposes, they must have proved of great service to the amateur floriculturist. The subject being inexhaustible, and the science of culture still in progress, we may expect to be favoured with the results of the success which many of its contributors may realize, by experimenting skilfully, in various ways, to bring to perfection such among the numerous varieties of flowers which now present themselves, and which by cultivation may be brought to greater perfection.

I have been looking through the *Cabinet*, which has now been above twenty-three years in existence. At its commencement I thought it attractive, and that it would, if it lived, be of great use to the floriculturist, which it doubtless has been, and its utility will continue while it is supported by contributors such as it has been favoured with, and while we have the pleasure of reading monthly something new in the progress of floriculture. It is satisfactory to see that the *Cabinet* has also made a corresponding improvement since its commencement, and particularly as regards the plates; I have now before me the first and last volumes, and the improvement in this department of the work is highly gratifying.

It is now some forty years since that some of the Cape bulbs attracted my attention; at that time the Ixias, Babianas, Gladioluses, and others, were mostly grown in peat, with several bulbs crammed into a pot, where they always had the appearance of starvation, rather than of free growth. I thought I would try what a more generous soil would do for them, and accordingly gave them a mixture of good sandy loam, with a portion of well-rotted dung and leaf-mould, and by only placing a single bulb of the strong-growing Gladiolus in a good-sized pot, and about three in a pot of the Ixias, Babianas, etc. By this mode of culture I succeeded in growing them to perfection. Some of the Gladioluses, between two and three feet high with spikes of flowers in proportion, were splendid; the Ixias, etc., also were healthy, and flowered in great perfection. So much did I admire them, that I solicited a friend of mine, an artist, to favour me with portraits of such as were most admired among them, which he cheerfully complied with.

If we turn our attention to the Cacti tribe, it will be remembered by many that only lime-rubbish was allowed for their culture; whereas now, by giving them a more generous soil, some of them exhibit a splendour in their flowers which was not even dreamt of at the era above alluded to. In order to try the effect of an entire freedom for the roots, a plant of the *Cactus speciosa* (now named *Epiphyllum speciosa*), worked on the *Cactus Pereskia* (now named *Pereskia aculeata*), was planted in a narrow border that was boarded off along the sides of a pit of a plant-house—the stock upon which it was worked was between two and three feet high; the progress it made was astonishing, as, in the course of three years, it formed a complete umbel from its summit to the ground, measuring about two feet in diameter, and in the flowering season formed one of the most splendid appearances that could be conceived, having a profusion of flowers, completely full, all round its circumference, and down to the soil on which it grew, which was a sandy loam mixed with leaf-mould.

During my minority I became attached to the family of Geraniums, or Pelargoniums, but having no greenhouse in which to house them during winter, I availed myself of two three-light frames; these being well guarded with coverings in frosty weather, I succeeded admirably in preserving them throughout the winter. In order to keep up my stock, and to add to it as many varieties as possible, being within a two hours' walk from Stourhead, the seat of Sir Richard Hoare, Bart., I paid it a visit once a year, when the gardener kindly furnished me with cuttings of the different kinds he could spare. I notice this to bring to recollection that the Sir Richard Hoare then living was an admirer of the Pelargonium tribe, and was among the first who obtained varieties by hybridizing; a variety of his raising, then much admired, went by his name for several years. A stimulus having been thus given, we now witness the result in the amazing number of varieties that have been obtained, and which are still on the increase, arriving at a perfection but little conceived of at the commencement, when endeavouring to obtain varieties; the same may be said of the Dahlia and Pansy, with others that are brought to perfection beyond the most sanguine expectations.

There was a period when some propagators were rather tardy in allowing their secrets to be known. I recollect the time when raising almost all kinds of evergreens from cuttings was considered a secret, and it was only through an act of courtesy that on one occasion I was admitted into one of the secluded compartments where the business of propagating was carried on, and which was then called the *Sanctum Sanctorum* for the propagating of evergreens. That which was then considered a secret has long ere this, no doubt, been brought to light, namely, by small cuttings being put under hand-glasses about the latter end of August or the beginning of
tember, on a shady border, in a light mixture of peat and sandy
n, where the following spring and summer they will have taken
. It will also be remembered by many, no doubt, how closely the
et was endeavoured to be kept, at a certain nursery, for propa-

gating the Camellia by inarching, etc., when a celebrated propagator was engaged from the Continent for the purpose. Now, there are peculiar cases in which it is natural to suppose that where there is a chance of getting a stock of some new or scarce and valuable plant, so that a hundred or more pounds may be realized by keeping the propagation of it a secret, it is what every one will do, and is not open to censure; but it is satisfactory to the lovers of floriculture, that in our day there is a liberal disposition exemplified by many to give publicity to what they have achieved in the art, and this is fully corroborated by the numerous contributors to the *Cabinet*, which I trust will sustain its celebrity, so as to ensure success for many years to come.

While on this subject, it may not be amiss to advert to the numerous varieties of plants and flowers which have been introduced from foreign climes of late years, through collectors being sent out by different enterprising nurserymen. Perhaps, among the various productions which have been received from abroad, the Victoria Regia may claim a first-rate position, and among the Orchids, there have been many rare productions brought under our notice. May we not expect that, through the indefatigable exertions made by individuals in exploring regions yet unvisited, a vast accession may still be made, of enhanced interest and value, to the number of species and varieties already introduced?

NOTES ON THE BOTANY OF THE MONTH.

BY MR. EDWARD SHEPPARD, BURY.

Towards the close of this month the pretty purple or lilac flowers of the Saffron Crocus, *Crocus sativus*, make their appearance, cheering us at a time when the majority of bulbous or corm-rooted plants are out of flower, reminding us of their earlier sisters, the promise of a coming spring:

"The bulb that slumbered in the ground,
Hath felt a quickening change,
And wakes, with bright apparel crowned,
As beautiful as strange."

The Saffron is supposed to have come originally from the East, but is now so common in Europe, that it is difficult to ascertain with certainty its native country. It is commonly reported that Sir Thomas Smith was the first who introduced it to England, in the reign of Edward the Third, and that it was first planted at Walden, in Essex, where it increased so rapidly as to confer a name to the place, still called Saffron Walden. There are even now some fields in the neighbourhood where it grows plentifully. The stigmas of this plant are cut away and dried, forming the article so much employed as a dye. In the southern and eastern districts, where chalk abounds, we may see abundance of the *Clematis vitalba* in bloom in the hedges, where it forms a thickly entangled mass, perfuming the air to some distance around. The flowers are borne in profusion, three together, each on its own stalk; the seeds are provided with long, curling, white, feathery awns, disturbed by the slightest breath of air.

> "To later summer's fragrant breath,
> Clematis' feathery garlands dance."

Great numbers of the Thistle tribe are out now, and indeed they are a very interesting study to the botanist the whole of summer and autumn. Among them are the following in bloom:—*Onopordum acanthium*, the Cotton Thistle; the whole plant is covered with white down resembling cotton, flowers large, surrounded with a prickly involucrum. *Cnicus lanceolatus*, the Plume Thistle, and *C. arvensis*, the Field Thistle, both common, very prickly species. *C. acaulis* is remarkable for the plant being almost destitute of stalk, and the flowers appearing to grow out of the ground; they are of a rich crimson hue. The pappus of this genus is the beautiful soft thistledown, so much admired, crowning the flowers, and singularly contrasted with the prickliness of the whole plant. *Carduus nutans*, the Musk Thistle, has large, purple, solitary flowers, with a rather musky scent. *C. acanthoides*, the Prickly Thistle; more common than the former, smaller, and more erect, flowers numerous, and the whole extremely prickly. *C. marianus*, the Holy Thistle, having broad, variegated leaves. *Carline vulgaris*, Carline Thistle; very spiny, flowers purple, variegated, the inner scales of the involucrum spreading, and coloured like petals; this species is very common. Belonging to the same tribe, *Centaurea cyanus*, the Blue Bottle, may now be found in flower; it is decidedly one of the most elegant plants of the family:

> "The Blue Cyanus we'll not forget;
> 'Tis the gem of the harvest's coronet."

C. nigra, Knapweed, is a species not perhaps so attractive as the *cyanus*, but is remarkable, and worthy of notice for its beautifully fringed scales on the involucrum.

Several of the Camomile tribe are in bloom; among others the Yellow Ox-eye, *Chrysanthemum segetum*, with beautiful golden yellow flowers. *C. parthenium*, Common Feverfew; flowers white, with a yellow centre, growing in a corymb or head, and the calyces downy. This plant is a fine bitter medicine, useful for its strengthening properties; it grows in waste places and hedges. *Anthemis nobilis*, Camomile, readily known by its aromatic odour; the leaves are very much divided, and the stems spreading. It grows abundantly on the barren gravelly heaths in the southern counties, forming a turf of a very lively green, studded with delicate white and yellow flowers, one only on a stem, which is its distinctive characteristic. Upon heaths we may meet with a pretty little parasite, *Cuscuta epithymum*, Dodder, twining its tiny thread-like red stems among the ling and other dwarf woody plants, and producing at intervals little clusters of very minute flowers. *C. Europæa*, another species, is found on nettles and thistles; the stems are leafless, and the whole plant derives its nourishment from that around which it twines.

Throughout this and the following month the many tribes of Lichens and Fungi are advancing in various forms; there is amongst them a diversity and elegance of appearance of which a minute observer only can be fully sensible. What can be more beautiful than to see these highly decorated though lowly offspring of Flora in all their youthful freshness and variety of colouring?

> "Oh! look at the strange and whimsical things,
> That 'mongst the wild Fungi we find."

This tribe is supposed to be as numerous as all the flowering plants put together; in Great Britain we have about two thousand varieties, most of which are to be met with during the damp days at the close of summer, and in autumn; few in winter. Of the Mushroom family two or three are edible, as *Agaricus campestris*, the Common Mushroom, and *A. oreades*, the Champignon. The majority of the others are poisonous, or at least of too doubtful a character for an inexperienced hand to meddle with. The *Agarics* may be readily detected by having gills, or little partitions across them. The *Boletus* family has holes underneath, instead of gills; one species is used in making German tinder, being dried and steeped in saltpetre. The *Pezizas* are cup-shaped, and of these there are more than a hundred species. The *Sphærias* are little round protuberances, generally growing on rotten sticks. *Lycoperdons*, or Puff Balls, sometimes attain the dimensions of a foot or more in diameter. Truffles, *Tuber cibarium*, grow completely under ground, and every one has heard of dogs and hogs being trained to hunt for them, which their quickness of scent enables them to do.

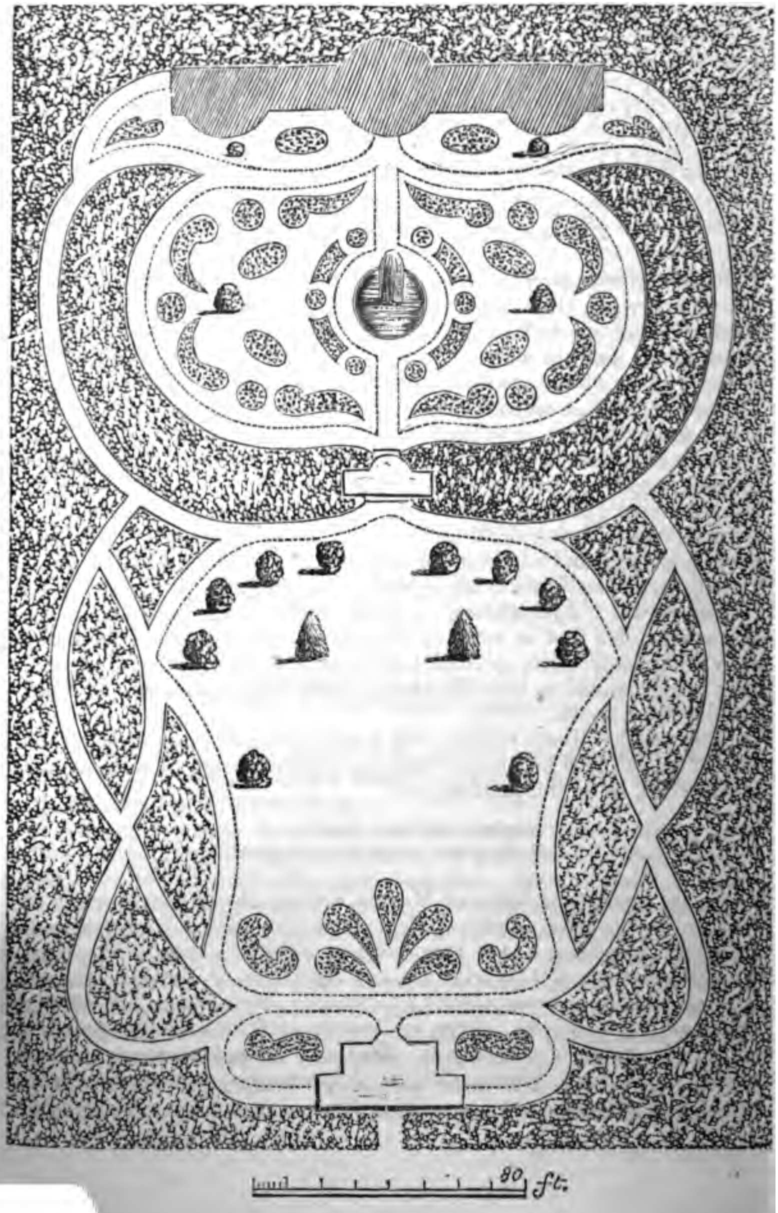
Many of the Mossy tribe at this season are in full verdure, and the root of an old tree becomes a landscape, with its tiny mountains and forests; for, as an old poet says—

> "Oft the small flower layeth,
> Its fairy gem beside the giant tree."

There are about four hundred Mosses, natives of our island, many of them most exquisitely formed, elegant plants. Their capsules, seen under the microscope, are very curious objects. One of the most beautiful families of this tribe are the *Hypnums*, or Feather Mosses, some of which are found almost everywhere; their stems are mostly branched, covered with leaves, with long stalked capsules growing out of the sides of the stems. One very abundant species, much employed to pack plants with, is *Hypnum triquetrum*, the three-cornered Hypnum.

DESIGN FOR THE FLOWER GARDEN AND GROUND OF A VILLA RESIDENCE.

BY T. RUTGER, ESQ.



In the accompanying design for a small villa residence, the ground comprises, according to the scale, something less than an acre and a half, in which is delineated the house, with its open lawn and shrubbery, the summer-house, flower-garden, and conservatory. The object aimed at in this design is to give as much length in walks as the limits of the ground will admit, as well as diversity in making them attractive, which may be done by judicious planting, and hiding them as much as possible from each other; where they do not come in contact with the grass, there should be grass verges. The summer-house, which is nearly in the centre of the ground, by being raised a step or two above the level of the walks, and having glass doors at each front, permits a view from it being obtained over both the lawn and the flower-garden. Along the boundary on each side, a few select trees may be planted, so as to shade the walks contiguous thereto, which is desirable during the summer.

ON GROWING THE BALSAM.

BY MR. THOMAS JOHNSON, UXBRIDGE.

Seed may be sown from March to the first week in May, in pots or shallow pans, using a compost of rich loam. The seed-pots may be placed in a hotbed, until the plants attain three or four pairs of leaves; then shift them into sixty-sized pots, using three-fourths of yellow maiden loam and one-fourth well-rotted dung, this will be found an excellent compost for them throughout the whole routine of shifting the plants. Set them in a frame or pit by themselves, supplying a gentle bottom heat. I think it will be found that bark beds, having walls made of dung, supported by stakes driven firmly into the ground, are always preferable to dung alone, as the warmth is more regular, and the heat more lasting.

The great point to be aimed at in this plant is to get them bushy, branching from the ground; two inches of bare stem is quite enough, as the plants then present a very handsome appearance. If the plants flag at all after their first shifting, shade them for a few hours in the middle of the day, for a few days; after this take off the lights from nine in the morning till four in the afternoon, when they should be attended to with water, to be given freely over head with a rose, and then shut the lights. They will require shifting, every ten days or a fortnight, into pots a size larger than before. The pots must then be replunged in the bark bed, which should be previously forked over, to keep up the temperature. This may be done every time the plants are moved. They may be either set on the bark, or plunged into it, according to the heat: should the temperature be too high, the former course should be pursued; if, however, it be gentle, plunge the pots up to the rim. As the plants grow and increase in height, it will be advisable to raise the frame with bricks at the corners, which will also allow a free circulation of air, and prevent their being too much drawn up. When they are intended to flower, it is best to remove them to the greenhouse, where they may be kept rather warm until the flowers begin to expand; if they are kept cool, and regularly shaded in the middle of the day, it will be found greatly to prolong their time of flowering.

In growing Balsams for windows, sow the seed from the middle of March to the end of April, in a shallow pan or pot. Cover the top of the pot with a sheet of glass until the plants come up; they should be kept inside until the plants attain about three inches high, when they may be potted off into sixty-sized pots. Set them out of doors from nine in the morning till four or five in the afternoon, regularly taking them in-doors at that time. As soon as the roots begin to coil round the sides of the pot shift them. This will be found necessary about once in three weeks; continue this treatment, and turn the pots round daily. I have seen plants which have been managed in this way bloom far superior to many which have been cultivated in the frame and greenhouse; for it is much better to cultivate them altogether in the open ground, than exposing them to such an extreme heat as they are too often in such cases subjected to, when the result is, plants drawn up, weakly, and with a poor show of flowers. When placed in a balcony to flower, they should be placed in double pots, the interstices between the two being filled with moss, which will tend to check dryness of the roots. Balsam seed should always be used fresh, as it will not keep good above a year. Cuttings may be propagated if struck in pure sand, plunged in a gentle bottom heat, and covered with a bell-glass.

ON THE TREATMENT OF CAPE IRIDACEÆ.

BY C. B. S.

The following account of my method of treating this interesting natural order of plants is a condensation of the results of my experience in cultivating them for several years; and although I have seen beds of some of the more hardy varieties of Sparaxis bloom well in the open air in my district, the West of England, yet I have always found far better success from pursuing the following system, and I am persuaded that the delicate beauty of the flowers of this order is much enhanced when, being grown in pots, they can be removed to the greenhouse. I examine the bulbs in October, potting the larger ones, separated from their offsets, in a compost made of sand and fresh light turfy loam, with free drainage; I have found, with regard to the more vigorous-growing Gladioli, that a sprinkling of well-decomposed cow-dung over the drainage conduces much to the strength of the plants. At the same time I prepare a bed of old dry tan mixed with some fresh stable manure, at least two feet in thickness above the level of the ground, and place on the top a large frame; within this I plunge the pots in the old tan, the stronger and taller growing Gladioli at the back, Tritonias, Sparaxises, Ixias, Babianas, etc., arranged in due gradation in front, down to the dwarf Oxalises and Lachenalias. At night I put on the lights, and in fine weather give abundance of air. I withhold water until the bulbs have made roots, and the leaves begin to put forth, it is then given with judgment, when there is no frost to avoid exhausting the bulbs by drought. If severe weather occurs, I bank the frame round with old tan assisted by hot dung, protecting the lights by a good external covering of straw or fern. With this management the various sorts of Sparaxis will begin to show bloom by the end of April, and being then removed to the greenhouse, open their flowers to the sun with great brilliancy. These are succeeded by the Ixias and Babianas, which may be removed to the front of the house. The Gladioli generally outgrow the height of the frame, and throw up their flower-stalks vigorously on the greenhouse stage. Lastly, the Tritonias form a fine show, in shades of orange, pink, and copper colour. When the blooms are past I continue to water the pots, in order to perfect the foliage, and form the bulbs for the ensuing season; by replacing them in the frame, and giving them full exposure to the sun until the leaves gradually die away, the bulbs become thoroughly ripened. They are ready for repotting the following October, after a period of rest. The natural order *Iridaceæ* is very extensive, and of Cape species, I know none which will not be found to bloom in perfection under my plan of treatment, which I have endeavoured to make intelligible to your readers, and shall be gratified if I succeed in eliciting any communications through your medium on my favourite tribe.

A FEW WORDS ON THE GEOGRAPHICAL DISTRIBUTION OF PLANTS.

BY G. F.

THE distribution of plants over the surface of the globe is a very interesting subject, and one which has never been very fully illustrated—indeed, volumes might be written without exhausting it. The most we are at present able to do is briefly to notice a few general characteristics of the vegetable productions of distant places. Over the entire surface there is a great diversity, and very peculiar floras—we may say that every village has its particular plants, and that those of one situation are not those of another. As a general fact, it is admitted that a high temperature is most favourable to vegetation. Hence, in the tropical regions plants luxuriate, and species abound more majestic in character than those in temperate and cool latitudes. It is nothing rare for the tropical trees to attain a height of one hundred and fifty or two hundred feet, and the very Grasses, which with us are generally small and insignificant, are there of gigantic habit. The Bamboos and Canes grow to an astonishing magnitude. The Palms, a tribe wholly unknown as natives of our countries, claim the tropics as their own. To these regions we are indebted for all those plants which have a spicy and aromatic flavour. These favoured climes give birth to a thousand elegant climbers, and myriads of parasitic plants of beauty and brilliancy, to which other countries rear no equals. Even the very trees of the forest are evergreen, and covered, in their season, with large, handsome, and often very fragrant flowers. When we cultivate most of these plants in our conservatories and stoves, they are far from equalling the size which they attain in their native jungles and woods. Yet indiscriminate praise is scarcely just even here. The tropical fruits are too sweet and luscious, and the majority of them far inferior in grateful flavour to those cultivated in our own country. There is neither the wheat to gild the fields, nor vines to yield the grape. Their plants are magnificent, varied, and stupendous; but they have nothing of that concentrated beauty, innocence, and charm which appertains to those of our hedgerows and flowering knolls.

To the southward of the tropics and in the extensive continent of Australia we find the vegetation curious, but scarcely to be called handsome. The leaves of the shrubs are mostly harsh, hard, and dry; their flowers peculiar, but their fruit of no value. Here the various tribes of Mimosa, Protæa, and Banksia are extremely prevalent, the Lily tribe equally rare; while in the southern parts of Africa, under the same latitude, the Irideæ, Amaryllideæ, and Liliaceæ hold extensive sway. The districts of the Cape of Good Hope may be said to be the richest botanic garden of the world; not only the Monocotyledonous plants before mentioned, but other classes are there to be found in almost endless variety. Of the elegant family of Ericas, or Heaths, we have more than 350 species introduced from thence. Stapelias and other succulent genera abound in the sandy deserts; beautiful members of the Geranium family and of the Mesembryanthemum nestle undisturbed on every bank, or climb, unheeded, over every thicket; yet the "Queen of Flowers," the Rose, is absent from this part of the southern hemisphere. The islands of the South Sea have their peculiar produce also, and perhaps few more extensive or more inviting fields are open to the botanist than this. The Bread-fruit, the Banana, and Papaw-tree, many of the Myrtle and Nettle tribe, and gigantic Reeds abound inland; the Cocoa-nut fringes the shores, while the Yam creeps along the sandy beach. If we pass to the north of the equatorial regions, and direct our attention first to China and Japan, we find, as well as in Central Asia, that generally so little of their riches is known it were almost in vain to attempt a description of their productions; though in respect to China and Japan, the exquisitely beautiful Camellia—some species of which afford the Tea of commerce—the Hydrangea, Wiegela, Pæonias, *Dielytra spectabilis*, *Pyrus japonica*, *Salisburia adiantoides*, and that common and favourite shrub *Acuba japonica*, all of which are now common in our gardens, serve to show the botanical riches we might expect to find were these countries well explored. China, too, is supposed to have been the original country of the Sugar-cane, Rice, and Oranges. Persia is by no means rich in botanical produce, yet it yields the Rose in endless variety; the Jasmine forms their hedges, the Fig, the Pistacia Nut, the Apple, and Peach compose their forests, while Melons of much luxuriance are cultivated in the fields. The northern parts of Africa partake of the general character of tropical vegetation. In the low, damp districts grow the Date, the Banana, and many other Palms; while in the deserts nought but succulent Aloes, the grotesque Cactus, the Euphorbia, and other similar plants, are able to survive the long and severe drought to which they are exposed. In Europe, the southern parts are rich and varied in valuable and handsome plants. Greece is a place of flowers, as of song; Italy is styled "the Garden of Europe;" the Levant and Mediterranean Islands yield to no country in the beauty and variety of their plants; France, Spain, and Portugal have each their own productions. In Prussia, Northern Germany, Northern Russia, Sweden, and Norway immense forests of Larch, Pine, and Fir trees crown every steep and rugged mountain-side, and Junipers and Cloudberries are scattered over moor and hill.

The number and character of species are materially diminished by a few additional degrees of latitude. In Lapland we no longer meet with smiling fields and hedgerows green; a dreary waste, with now and then a stunted misshapen Pine, a dwarf Birch, a few scattered Grasses, and occasionally a little flower, more hardy than the rest, are all the flowering plants that relieve the monotony of the scene. These little plants are such as are known as Alpine, and include Primroses, Saxifragas, Androsace, Aretia, etc.

In the New World the same general laws are in action, though the vegetables are different from those of the Old. The flora of Spitzbergen is as scanty as that of Lapland. Canada and the northern States of the Union give rise to immense forests of the Coniferæ, while the under-growth is composed of Bilberries; no Heaths, however, attend them, as with us.

The middle and southern States abound with an infinite variety of Oaks, the Tulip-tree, and the fragrant Magnolia. Mexico, Chili, Peru, and the West Indies, with countries of corresponding latitude, are tropical in produce, Brazil scarcely less so; while in the extreme country of Patagonia, the few scattered Coniferæ appertaining to such cold latitudes are again discoverable. Thus a regular gradation in the character of the plants is plainly discernible from the equator to the poles. There is also an equal gradation in the number of species: at 80° north, the number is about 30; at 70°, in Lapland, there are 534; in Sweden 1300, at 60°; 2000 at 52°; 2800 at 45°, in Piedmont; 4000 at 20°, the latitude of Jamaica; and more than 5000 species in 15°. In rising above the level of the sea, vegetation suffers modifications analogous to those we observe in advancing from the equator to the poles. These phenomena are strongly marked, and rapidly succeed each other on the sides of mountains. A height of 12,000 or 15,000 feet in the hottest countries produces changes as strongly marked as the distance of the 2000 leagues which separates the equinoctial line from the hyperborean regions. Tournefort observed, at the foot of Mount Ararat, the plants of Armenia, a little higher those of Italy and France, still higher those of Sweden and Norway. Similar observations have been made on other mountains.

The Oak grows on plains nearly level with the sea; it ascends the sides of mountains until it reaches the height of 5000 to 6000 feet, and its vegetation is much less majestic as it approaches these heights, where it ceases to grow. The Beech only appears at an elevation of 1800 feet, and finishes its course 600 feet below the Oak. The Yew-tree is seen at 4200, reaching as far as 6000 feet, and the Scotch Fir establishes itself between 6000 and 7000 feet. The growth of these trees being arrested, shrubs, with dry leaves, low, and sometimes creeping stems, which remain concealed among the snow in the winter, begin to show themselves. Such are the Rhododendrons, Mezereons, some species of Willow, the Dwarf Birch, and the Juniper. After these we may meet with small plants, having perennial roots, leaves in the form of a rosette, and with naked flower-stalks. We first perceive varieties of the Gentians, Primulas, *Saxifraga longifolia*, *aizoon*, etc., then *Ranunculus alpestris*, *nivalis*, *parnassifolius*, *Aretia alpina*, and at last the *Ranunculus glacialis*, *Saxifraga cæspitosa*, *oppositifolia*, *androsacea*, and *Grœnlandica*. These last-mentioned plants, mixed with various of the Lichens and Funguses, attain an altitude of 10,000 feet, and are bounded only by the limit of perpetual snow.

Temperature, soil, exposure, and degree of humidity all exert their influence, and modify the natural productions of a district; one species greets us here, another there; one smiles from a cliff, another blushes from the stream; one, as if conscious of its beauty, offers itself boldly to our view, another, like the Violet and the Lily of the Valley, seems to hide itself only that it may be sought for; yet when found, how large a share of fragrance doth it yield, and what simple loveliness of aspect and perfection of organization does it not disclose.

"There's not a heath, however rude,
But hath some little flower,
To brighten up its solitude,
And scent the evening hour."

ON THE PROPAGATION AND MANAGEMENT OF ACACIAS.

BY A NOBLEMAN'S GARDENER.

SCARCELY any genus of flowering plants contains so great a number of species as Acacia; many of great beauty, and varied attraction of form and habit, but of little diversity of colour, being mostly of divers shades of yellow. This genus comprises both stove and greenhouse species; it is my intention to offer a few remarks on those whose cultivation is simple and within the reach of most persons possessing a greenhouse or conservatory; these are mostly evergreens, deserving a place wherever they can be grown, and form in many cases very splendid specimens.

In propagating the Acacia by cuttings, they should be made when the plant is in a dormant state, before the growth commences, and will be found to strike freely; let them be cut to a joint, and strip off the leaves about an inch from the lower extremity. Insert them about an inch deep, round a wide pot, in a mixture of loam, peat, and sand; place a bell-glass over them, pressing it down somewhat to exclude air, having previously given a gentle watering. Plunge the pots in a warm frame or gentle hotbed, and shade from sun. Let the glasses be taken off and wiped each morning, to prevent damping off, and do not allow the soil to become quite dry, or they will speedily fail. As soon as the cuttings have struck, and show signs of growth, fill sixty-sized pots with a compost of turfy peat, broken small, one-half, sand one-fourth, and loam one-fourth, with a slight admixture of well-decayed stable manure. In this pot off the cuttings; water them and place them in a shaded corner of the greenhouse, until they sufficiently establish themselves. If it be desired to make dwarf, bushy plants, pinch them in; but it is best to allow them free growth, which shows to advantage the diversity of habit and foliage which is so prevalent in this pretty tribe. With respect to shifting, this should be done when the plants begin to make a ball of roots around the pot, when they should be transferred to a size larger. It is of importance to have the pots well drained, one-third full of broken crocks is not too much; cover with sufficient of the foregoing compost to allow the surface of the ball to come nearly to a level with the top of the pot, filling up the sides and pressing it round the roots gently, so as to avoid breaking the fine fibres. Shade for a day or two, when they should be transferred to a cool frame, where they may be left to grow, occasionally attending to watering, until the time arrives for placing them in their winter quarters in the greenhouse. The third season they will progress well, and assume a finished appearance, and will require after this but a little attention to shifting properly and watering; the former is best done when the plants are dormant, and manure may be omitted from the compost altogether. Most kinds flower in early spring, and after blooming should be set out, or plenty of air admitted to the house. If set out of doors, place the pots on tiles, that the roots may not strike through into the soil; and screen them from high winds and too much wet—a shady situation is best for them. When the plants become large, they will need shifting but every other year; at which time, if the roots are found in too great a mass, it is well carefully to prune them, as also to thin out the plant. Attention should be continued to watering, as those with much root will soon flag if it be withheld. Those who can cômmand sufficient space may, as the plants increase in size, transfer them to tubs and large boxes, where well-grown specimens, covered with their delicate blossoms, are among the prettiest objects which the conservatory admits of.

ON THE GARDEN ANEMONE, WITH REMARKS ON ITS CULTURE.

BY MR. A. LAING, SETTLE.

MY garden has been an attractive object for nearly twenty years, through my fondness for this flower, of which I grow a very considerable number, and for grounds which are limited in dimensions they are very well adapted for making a show in the spring months. I am induced to send you a short account of my treatment of this old-established favourite, the culture of which is so easy, that I am quite surprised it is not more generally grown; many of the double kinds are very handsome. My practice is this: about the last fortnight in September, I take out the natural soil of the bed to the depth of eighteen inches, in the bottom place a layer of cow-dung, three or four inches thick, and then fill up the bed, to within an inch and a half of the surface, with the following compost:—Take of thoroughly rotted cow or horse dung, leaf-mould, and heavy loam, of each six barrowfuls; white pit sand, two barrowfuls,—which mix well together. Let the bed lay to settle till the middle of October; when having raked over the surface, the tubers may be planted upon it, in six rows, six inches apart from root to root: this distance is absolutely necessary, to allow room for their fine flowers to expand and show themselves. Cover each tuber with a little white sand, and fill the bed level with the surface with light sandy loam; compact the surface with the back of the spade. I protect them from heavy rains, or severe frost, by straw mats, supported from the surface of the bed by a wooden frame, made like the roof of a house; but do not continue this covering except when absolutely necessary, as nothing is so hurtful to them as confined air. Shade them with an awning from sun and rain when in full bloom, and give them rain-water every other day, poured between the rows. As soon as the bloom is over, cease to give water, and admit all the sun possible, but not a drop of rain —as the quicker vegetation is destroyed, the better will be the bloom next season. Take up the roots as soon as the foliage dies down.

They will answer nearly as well grown in thirty-two-sized pots, using the same compost, and plunging the pots in cinders. By following the above plan I am amply repaid for the little trouble they require by an abundance of dazzling blooms.

ON THE POT-CULTURE OF PANSIES.

BY K. B.

I HAVE been a grower of Pansies for many years, and my practice has been very successful; my favourite plan is to grow them in pots, yet I by no means disapprove of cultivating them in the open border, although I believe that by pot-culture we succeed in obtaining equally fine flowers, combined with greater perfection of form than we do when the former method is pursued. If acceptable to your readers, I shall feel a pleasure in having the following brief remarks on my treatment inserted in the next number of the *Cabinet.*

I commence with small plants having short stout stems, and use small pots. They require the same rich kind of soil or compost for pot-culture as they do in the open ground, but more frequent watering (except when in their inactive state in the winter season, then needing but a very moderate supply), which should be with liquid manure, or soapsuds, to be carefully poured into the pot without sprinkling any upon the foliage. Shift into larger pots as the plants advance in size, and see to frequent top-dressing with leaf-mould, well-rotted dung, or the ashes of burnt weeds, vegetables, or wood. The plants must be entirely defended from the powerful rays of the sun, but require the natural free air, dews, and rains, until the buds are near their full size and begin to expand, at which time the blooms should be defended from wet and winds. They require a free drainage at the bottom of the pot, which should be carefully attended to each time the plants are repotted.

REMARKS ON THE VARIOUS SOILS AND MANURES MADE USE OF BY THE FLORIST.

BY W. P., A PRACTICAL FLORIST.

SEEING the brief remarks on the composition of various soils used by us, I am induced to send the annexed for insertion in your useful Magazine, if thought worthy of a place.

Peat, loam, sand, manure of various descriptions, and decayed vegetable substances are the chief kinds used in floriculture; but very various are the mixtures and composts that may be obtained from them, by incorporating one with another in various proportions.

LOAMS are of various kinds, and go by different names; as stiff loam, sandy loam, yellow loam, etc. These differences are caused by the loam being obtained from different pastures, and sometimes from being got from different depths. Yellow loam is the kind that I should recommend for floricultural purposes, owing to the openness of its nature, and the rich mellow qualities it possesses. It should be obtained from some neighbouring pasturage that has not been broken up for years.

Peat, like loam, has different names according to its kinds, which are peat, sandy peat, and bog earth. Peat is that collected from commons, of a fine loose nature, but destitute of silvery sand. Sandy peat is that collected from where the *Calluna vulgaris* grows spontaneously, and which is plentifully supplied with the above sand; it is most congenial to the growth of tender exotics, with fine fibrous roots, as Ericas, Epacris, etc. Bog earth is that obtained either from below the others or from some moss, or uncultivated place; it may be distinguished from the above by the blackness of its colour and the closeness of its nature; it is sometimes found saturated with water. This kind, after being duly prepared, answers very well for what are commonly called bog plants, such as Rhododendrons, Azaleas, Kalmias, and Andromedas. Manures are also of various kinds, as those produced from horses, cows, pigs, and fowls, and each has a different nature—as, for instance, dung from cows being the coldest, from pigs the hottest, and from fowls the richest; but I should recommend to horticulturists well-decomposed hotbed dung, made from the produce of the horse-stable, and at least two years old, which, in my opinion, will prove the best, as this kind of manure embraces none of the above extremes. Vegetable decayed substances are also various, as leaf-mould, rotten willow wood, wood ashes, and also the refuse of the vegetable or kitchen garden. Sands are either found in beds, or on the sides of rivers; but the best kind for florists is what is generally termed drift sand, or sand washed by heavy showers into ridges.

Having thus briefly noticed the primary kinds of soils used in floriculture, it remains for me to state the preparations necessary before they can be used. The proper time for collecting the different kinds of soils and vegetable manures is unquestionably in autumn, after the beneficial rains and solar influence of the preceding summer, and that they may receive the requisite ameliorating quality of the forthcoming winter. In getting the various kinds required, care should be taken not to dig more than nine, or, at the furthest, twelve inches below the surface, as the soil lying lower is more concealed from the sun and atmosphere, and consequently not near so good. Let them be carted in fine fair weather, and thrown up in the compost ground in different heaps, placing the greensward of the loams on the top, with the roots uppermost, that they may the sooner decay. Thus let them remain till winter, when they should be at different times turned over, well chopping and mixing the sward with the soil. The dungs, decayed vegetables, fallen leaves, and rotten wood may be treated in a similar manner.

It is customary with old cultivators to sift their composts before using. This is, in a great measure, the cause of exotics not succeeding, and appearing in health and vigour; for, by the process of screening, all the stringy and fibrous rooty part of the mould is lost, which is certainly the best part of it, as by its means the compost is kept open and free for the young roots to run in, and without this part the particles of the soil get close together, and often bake hard. Those who have practised this method think it impossible to improve, but one moment's reasoning with themselves will convince them they are in error. Manures, etc., must, of course, be coarsely screened, that the stones, pieces of wood, etc., may be extracted; but this operation must only be performed when the said kinds are wanted.

NOTES ON NEW AND SELECT PLANTS.

142. RHODODENDRON BLANDFORDIÆFLORUM. Nat. Ord. *Ericeæ.*—Another among Dr. Hooker's valuable acquisitions from Sikkim-Himalaya, growing on those mountains at an elevation of from 10,000 to 12,000 feet. Its habit is not very attractive, being a rambling twiggy bush, attaining a height of about eight feet, not very well furnished with leaves; the flowers, however, are very striking, yet variable in colour, and not unfrequently in form. The plants which we have seen in bloom at Kew have flowers of medium size, the tube rather narrow, outside a fine orange-red; and inside, together with the mouth of the flower, orange-yellow; before expansion the blossoms are frequently green. The leaves are from two to three inches long, and coriaceous in vigorous plants. The wood of this species, when used for fuel, is said by the Nepalese to cause swelling and inflammation of the eyes, from its deleterious smoke. (*Bot. Mag.*, 4930.)

143. RHODENDRON CAMELLIÆFLORUM.—This species is an example of the great diversity in habit and appearance which exists in the Rhododendrons. The flowers are blush colour, small, tube very short, and foliage narrow, of a dull green, the under surface as well as the branches covered with minute brown scales. It was first detected by Dr. Hooker in the Pine forests of Nepal and Sikkim, at an elevation of from 9000 to 12,000 feet above the sea. It has also been found in Bhotan. In the close forests it is generally epiphytal, growing on the limbs of tall trees, from whence its branches, which attain a length of six or eight feet, depend in the air. In situations where the trees are more open, it is found on the ground and on rocks. (*Bot. Mag.*, 4932.)

144. RIBES SUBEVSTITUM, Nat. Ord. *Grossularieæ.*—From California, discovered during Captain Beechey's voyage of discovery in the

Pacific, and now first introduced by Messrs. Veitch, through their indefatigable collector, Mr. Lobb. It is a Ribes of very distinct appearance and habit; the flowers are large, and somewhat resemble a small Fuchsia, the calyx is a deep purple colour, and the petals blush; the stems and branches are prickly, and the foliage very neat. (*Bot. Mag.*, 4931.)

145. HETEROTROPA ASAROIDES. Nat. Ord. *Aristolochieæ.*—A singular plant from Japan, introduced by Dr. Siebold. The flowers are globose, of thick fleshy substance, dark, dull purple or green. The leaves are spotted or mottled similar to those of *Cyclamen Europæum.* The root is a rhizome, resembling that of an Asarum. This plant has generally been confined to the greenhouse, but it is probable that it would bear the open air in our climate. The flowers are borne, in April and May, on short footstalks rising from the root. (*Bot. Mag.*, 4933.)

146. AGAVE CELSII. Nat. Ord. *Amaryllideæ.*—This species was introduced many years ago by M. Cels, of Paris. Its native country is unknown. It is thought to be probably Mexico. It bloomed, for the first time, at Kew in May and June this year. Its foliage resembles that of an Aloe, being of a pale glaucous green; each leaf is near two feet in length, the margin beset with short spines. The scape or flower-stem rises near four feet high, clothed with imbricated bracts, flowers pale green. (*Bot. Mag.*, 4934.)

147. LISIMACHIA LINEARIFOLIA. Nat. Ord. *Primulaceæ.*—This species was first discovered by the naturalists attached to Captain Beechey's expedition, when at the Loo Choo Islands. Mr. Fortune, however, found it in China, and sent it to Mr. Glendinning, of Chiswick. It is said to be quite hardy, and to form a pretty little herbaceous bush, of about two feet high. The stem is smooth, shining red, erect, and branched from the base. Innumerable white starry flowers crown the upper portion of the stem; each blossom is more than half an inch across, and, with the dark green leafy bracts, has a very pretty appearance. It has not been ascertained whether it is a perennial or not. It is, however, a decided acquisition to this tribe of herbaceous plants. (*Gard. Chron.*, 180.)

148. CLEMATIS PATENS, *var.* HELENA. Nat. Ord. *Ranunculaceæ.* This is the fourth variety of *Clematis patens* which has been, within a few years past, introduced from Japan by the illustrious Siebold, and noticed by us. The present variety is distinguished from others above referred to by its yellow stamens, combined with a white flower. The latter is large in size, often measuring about six inches across, and the white very clear. The whole four would form handsome ornaments for trellis-work, covered walks, and alcoves. (*Flore des Serres, Tab.* 1117.)

149 NICOTIANA GLUTINOSA. Nat. Ord. *Solaneæ.*—A native ot Central America, introduced by M. Von Warscewicz to the garden of M. Van Houtte, where it flowered last autumn. The form of the corolla at once points this plant out as a distinct species, being very

wide in the mouth, the segments pointed, reflexed, colour of the tube peachy yellow, outside as well as inside, segments lilac-purple. The leaf is large and rough, covered with glutinous hairs, dull green, and the whole plant tall growing, and of singular habit. (*Flore des Serres*, *Tab.* 1121.)

QUESTIONS, ANSWERS, AND REMARKS.

GREENHOUSE PASSIFLORAS.—A. D. would feel obliged to any of the readers of the *Floricultural Cabinet* who will favour him with the names of all the Passifloras that succeed in a greenhouse, and the soil that suits them.

PLANTS SUITABLE FOR AN ENTRANCE HALL.—I should esteem it a favour if you or any of your correspondents would kindly inform me in an early number of your interesting Magazine, what plants are the most suitable for placing in an entrance hall (where they are exposed to draughts), so that I may have a succession of attractive flowers throughout the year.

PANSIES.—Also can you inform me how to prevent Pansies from degenerating in size, as mine have done, although side shoots were taken in the autumn, and carefully protected through the winter in a frame, and planted out in spring? My flowers are so small they are scarcely worth the trouble of culture.—*A Subscriber and Constant Reader.* [For Pansies refer to the article in the present number, by such treatment you will not have cause to lament their degenerating.—*Editor.*]

SHOW RANUNCULUSES.—The following fine varieties were exhibited by Mr. C. Tyso, florist, of Wallingford, at the Royal Botanic Society, Regent's Park, June 18, and at the Crystal Palace, Sydenham, June 25th and 26th. We learn from one who saw Mr. Tyso's unrivalled collection in bloom, that the beds were covered with a profusion of flowers of almost every tint. A rough estimate might set them at 30,000, and they presented, as a whole, a sight enchanting to any beholder, but especially as entered upon in detail by those initiated in floral pursuits. In the collections exhibited, we notice in the first place a few selfs. Of the dark red kinds, nothing exceeded in richness the well-known old continental variety Naxara or Nègre. We never saw this flower so nearly black as in the stand at Regent's Park. Alladius, a pleasing crimson, a little shaded in colour. Marquis of Hertford, a full large crimson, very handsome. Apollo is very like this, but the petals appear more curved. Costar's Apollo is a red-maroon, a full flower, not so smooth as the two former, but showy and useful. Eliza, a well-known, beautifully shaped straw colour; the specimens were very chaste, and finely grown. Sabina, a large pale yellow. California, an excellent-shaped yellow, sometimes slightly mottled. Victor, a good purple, with stiff petals. Melpomene, a fine red, with smooth even petals. Auriga, a useful purple. Sarpedon, a good red; an old Dutch variety. Wilsonia, a crimson-purple, useful, but petals rather indented. *Particoloured Varieties:* Commodore Napier (Lockhart), a sulphur ground, with brown edge, very nice shape before it is too far blown, and good size. Gomer, yellow, with dark strong edge, a good top-tier flower, though rather coarse. Exhibitor, yellow, with red mottle, high crown, smooth petals, and a first-class flower. Elegance, deep yellow ground, with bright red edging. Eliacine, white edged with bright purple, a full flower. Coronation, a fine creamy sulphur ground colour, with rosy red mottling, excellent shape. Fairy, delicate cream ground, with rosy purple spots. Archibald Johnson, yellow, finely edged with red. Beauté Mignonne, a compact useful red, with small yellow stripes. Mélange Mignonne, with broader gold stripes. Larne, white, with purple edging, full and good shape. Kilgour's Queen, large white, with delicate purple edging. Prince Albert, light yellow, with brown edge. Phrosine, cream, with crimson edge. Hon. Robert Wilson, clear white, with distinct crimson edge. Festus, yellow, with brown spots, large and full, good flower for back tier. Melancthon, creamy sulphur ground, laced with rosy purple, in some stages very fine. Liffey, white, with good purple edging. Indicator, deep yellow, with distinct dark brown spots, fine character.

Defoe, clear yellow, with faint spots. Suaviter, pale yellow, with red edge. John Waterston, white, purple edge, large and full. Several other flowers were fine this season, which are not usually found in a prize stand; among these we may name Burns (which was clean in the ground colour, and better in character than usual), Belle Agréable, Dr. Channing, and Vanguard.

PYROLA ROTUNDIFOLIA.—Abundant evidence was still visible of the ruin occasioned by the storm of the previous day, in the loose earth, broken fragments of rocks that were scattered around, and in the marks of terrible concussions that had taken place between the projecting rocks and the larger fragments in their descent, the point of contact being surrounded by a stratum of smoke-like dust, where the smell of fire was still apparent. I had penetrated to a considerable distance among the cliffs near the summit, at a place where one of the masses had descended, breaking off pieces of rock, and tearing up and grinding the vegetation in its progress. I had just pulled myself up and secured my footing on a green shelf, which had been partly torn from its moorings on the rock; on getting hold of the shelf above and raising myself upon it, my astonishment and delight may be better conceived than expressed, on perceiving the whole shelf covered with a dense mass of *Pyrola rotundifolia*, flowering profusely, and literally loading the air with its delightful fragrance. No one who has not witnessed such a scene can form an idea of the beauty of this lovely alpine gem; and the pleasure was no doubt considerably enhanced by the reflection that on this spot, perhaps, the foot of man had never stood, that no sacrilegious hand had ever culled these floral gems before.—*Hooker's Journal of Botany.*

VARIEGATED LEAVES.—Physiologists have contributed to strengthen the opinion that the variegation of leaves is the result of some disease in the plant, which presents that modification. It is not our intention to investigate whether the above opinion is well founded or not; but as some plants are all constantly variegated, and as others have on the same bough some leaves variegated and others not at all, we think the question naturally arises what conditions are necessary in order that the variegation of a plant may become permanent. Now, observations up to the present time have shown that when the edges of the leaves are variegated, or in other words, when the variegation is marginal, it is usually permanent, but when it is spread over the surface of the leaf, or if it takes the form of blotches, it is nearly always variable. The blotches may cover nearly the whole of the leaf, but they may likewise entirely disappear, as is the case with the Holly, Ivy, and Euonymus, when they grow luxuriantly. Only one plant, the *Aucuba japonica*, appears to be an exception to this general rule, and up to the present time the reason of this exception has not been discovered. If, on the other hand, we examine plants with marginal variegation, the law changes, and, under whatever condition they are, the variegation is permanent; for instance, to return to the Holly and Euonymus, of which we have just spoken, the *Euonymus japonicus*, var. *argenteus*, which has its leaves bordered with white, never varies—all its leaves remain variegated. In the variety of the same tree, the leaves of which, instead of being bordered, are blotched with white, the variation is considerable. The same holds true with regard to the common Holly; in the variety the leaves of which are bordered with white, we find very vigorous plants regularly variegated; in the blotched-leaved variety we meet with leaves the whole surface of which is yellow, others only partially marked with that colour; and lastly, whole branches may be seen on which not the slightest trace of variegation can be found. These variations must have a cause; but that cause is unknown, and it is to induce physiologists to endeavour to trace it out that I have written the above. If it be discovered, we may perhaps, at the same time, find the means of fixing the variegations; and the importance of this discovery to the decoration of gardens would be sufficient to induce some experiments being made with a view to the solution of the problem.—*Revue Horticole.*

TROPÆOLUM TRICOLORUM.—There are not many plants which possess more real interest than this, as it continues in bloom for nearly the whole of the season. It may be successfully cultivated either in a greenhouse, pit, or even a window, if preserved from frost. The treatment I pursue is the following:—When the plants have done flowering, they are removed to the back of the greenhouse, or to any sheltered place most convenient, and are allowed to dry off gradually. When the stems have become completely dried up, and break from the bulbs, the latter are carefully taken out of the pots in which they have flowered, wrapped in paper, and preserved in a drawer, until the time arrives for their being started again into growth; this will be about the middle of September, when they will have grown a few inches. I then pot them directly into the pots they are intended to flower in. For bulbs from four to five years old, I use eleven-inch pots, and smaller in proportion to their size. The soil which I find to suit them best is a mixture of equal parts of turfy loam and peat, with a portion of well-decomposed cow-dung, and a sufficiency of silver-sand to make the whole gritty. These materials should be well mixed together, and used in a rather rough state. In potting, I employ clean washed pots, and place about one inch and a half of broken crocks over the bottom, with a layer of moss, to keep the soil from mixing with the drainage. In filling the pots, I use the rougher portion of the soil first, and the finer as the pots become nearer full. This mode of proceeding secures perfect drainage, which is of the highest importance. My pots filled, and lightly pressed down, I insert my bulbs, leaving their crowns just below the surface; I then give a good watering with a fine-rosed pot, and keep them afterwards moderately damp; but I never allow water to stand in the pans, as they are impatient of much moisture at any time, except when in full flower, and then they require a rather plentiful supply. I always fix the trellis on the pot at the time of potting, as it saves the roots from being injured, as would happen if the operation was delayed to a future time. I carefully lay in the shoots as soon as they are produced, and fill every part of the trellis, which is brought over the front of the pot, to within four or five inches of its bottom. This gives them a neat appearance; and a month before they come into full bloom, I contrive to have the shoots equally distributed all over the trellis; for when this is the case, the beauty of the plant is very much enhanced. Nobody who loves flowers should be without this valuable little plant, the training of whose tiny shoots over the slender trellis that is destined to support them affords agreeable employment for many an otherwise profitless half hour; and then its curiously formed, lovely, red flowers, when once developed, create such a charming display, that any little care bestowed on it during its early growth is amply repaid.—*A Practical Man.*

BUDDING ROSES.—Among the many methods for budding Roses, I have found none answer so well as the following, which I have adopted for some time, and which I think should be more generally known. The bud for insertion is taken off the shoot very close to the eye; the tip or part of the bark below the bud is cut off quite close, to allow the bud to be pushed closer into the stock without being bruised. It then requires only to be tied above the bud, and a composition applied to exclude the air and keep the bud cool, consisting of two-thirds cow-dung, and one-third stiff loam. The bud requires no untying, and gradually grows so closely into the stock as hardly to be distinguished from a shoot, and is not so liable to be blown out or injured. The composition is applied in a liquid state with a small brush.—JAMES SKIRVING, *Downham.*

ON WINTERING VERBENAS.—The plan which I have for some time successfully adopted in keeping my Verbenas in small pots through the winter is the following. In the early part of July, I strike as many cuttings of the sorts desired for filling the beds next year, in three-inch pots. When they are filled with roots, which will be about the middle of August, I prepare a box for each sort, filling one-third of each box with broken crocks or cinders, and fill up with two parts of good rich loam, one of sand, and one of leaf-mould. I place the plants in this compost at equal distances, and peg down the shoots all over the box, where they soon strike root and form one mass. I then transfer them to a cool frame during winter, keeping off the lights except in frosty or very wet weather. As soon as spring approaches, they will make young shoots, which I strike in a gentle hotbed, in three-inch pots; these will be fit to put out in April, together with the plants in the boxes; the latter are best turned out by removing one of the sides of the box, planting the mass in the middle of the bed, which is at the same time filled up with the young plants from the three-inch pots. The strong plants from the box occupying the centre of the bed have the start of the others, and a fine effect is produced by very simple means.—*W. Stark.*

ON DATURA CERATOCAULON.—The following is my method of managing this plant, a plan which I have followed for some years with success, and am assured the Datura is well deserving the notice of such as retain a border for mixed flowering plants by the side of a favourite walk. One objection to the more general cultivation has been the supposed difficulty in getting the seeds to germinate; I have, however, obtained a sufficient supply by letting it shed its seeds upon the ground in the autumn, and afterwards digging them in. The following spring, when the weather set in warm, many of the seeds vegetated, and when the plants were sufficiently strong they were transplanted, with very little check. The seeds will lay in the ground and retain their vitality for several years; but I now would more particularly recommend them to be gathered as the seed-vessels burst. Let a flower-pot of sufficient depth and width be filled with garden soil to within four or five inches of the top, on which spread a thick layer of the seed; then fill the pot with the soil, place it in a cold frame, and protect it from frost. About the beginning of April stir the soil in the pot so that many of the seeds may be within one inch of the surface. Place the pot in the shade in a house or frame, where there is a moderate growing heat. If in a frame, plunge the pot in the soil, and water sparingly. If after a month or six weeks no plants appear, plunge the pot to the rim in the open ground, there to remain until late in the autumn, to be again taken up and put in a frame, and in the spring following the same process must be repeated. When the plants come up they should be potted and treated as other tender annuals are, until such time as the weather permits their being planted out. The peculiar suitability of this plant consists in a certain grotesqueness of stem and branches, together with fine large funnel-shaped whitish flowers, which expand late in the afternoon, thus giving variety and cheerfulness to the evening walk, whilst those plants whose gay-coloured flowers affect the sunlight are imperceptibly closing to repose.—*G. C.*

Descriptive Remarks on a few Select Ixias.—This beautiful and attractive genus has been much neglected in England since its introduction, about a century back. There is a lightness and elegance in their growth and habit, and a rich contrast in colouring, which few other genera afford. The brilliant orange of Conica, the crimson of Crateroides, and the sea-green of Viridiflora, are not surpassed in brilliancy of tint by the same colours in any other class of flowering plants. They require to be planted in autumn, and protected in winter; this care is amply repaid by their brilliancy and beauty during the blooming season, May and June. It is also necessary that they should be taken up every season, unless the situation in which they are planted be particularly dry, which prevents their roots from decaying. They also do well in pots; those varieties of dwarf habit and with large flowers being best suited for this purpose. Most of the following may be had at low prices from Mr. Bernard Saunders, St. Heliers, Jersey, who has one of the best collections of this and other allied tribes. Aulica, rosy yellow or salmon, two feet high, blooms early. Capillaris, lavender-rose, two feet, blooms late. Conica, brilliant orange, one foot, early. Crateroides, bright crimson. Cuprea capitata, copper colour, centre dark, large trusser, very free bloomer, and dwarf habit. Cuprea exaltata, copper colour, rather richer in tint than the last, taller, and very free blooming. Erecta, pure snow-white, erect and handsome. Flexuosa, pale lavender, a tall variety, blooming late. Lilacina, lilac, centre dark, a free flower, height eighteen inches, early. Lilacina ramosa, similar to the last, but later in blooming. Lilacina Sarniensis, lilac-purple, an abundant late bloomer, eighteen inches. Linearis, white, late. Longiflora, buff, dwarf habit, late. Longiflora hybrida, beautiful rosy white, an abundant late-blooming variety. Longiflora purpurea, purple, like the last in habit. Maculata suprema, buff, with large crimson centre, and crimson tips to each petal, a beautiful variety, free blooming, and large trusser. Mutabilis, white, changing to pink, with crimson centre. Ochroleuca, lemon colour, with darker centre, a large and good flower, late. Purpurea campanulata, a fine, large, purple flower, dwarf and remarkably showy, early. Purpurea capitata, purple, capitate, a free bloomer, eighteen inches high. Racemosa, lilac, with dark centre, late. Rosea, pretty, delicate rose, eighteen inches. Rosea maculata, rose, with dark centre, two feet high, very delicate and pretty. Sanguinea, golden yellow, with blood-red centre, very showy, dwarf, and late blooming. Stellata, tall habit, purple, late. Sulphurea maculata, bright yellow, with very dark centre, large flower, dwarf habit. Tricolor capitata, a pretty combination of white and yellow, with dark centre, and rosy outside of petals, very showy, and dwarf. Viridescens, pale green colour, a tall variety. Viridiflora, beautiful pea-green flowers, with black centre, tall and erect in habit, very showy and attractive, late blooming.—*W. B. P.*

Fig. 1

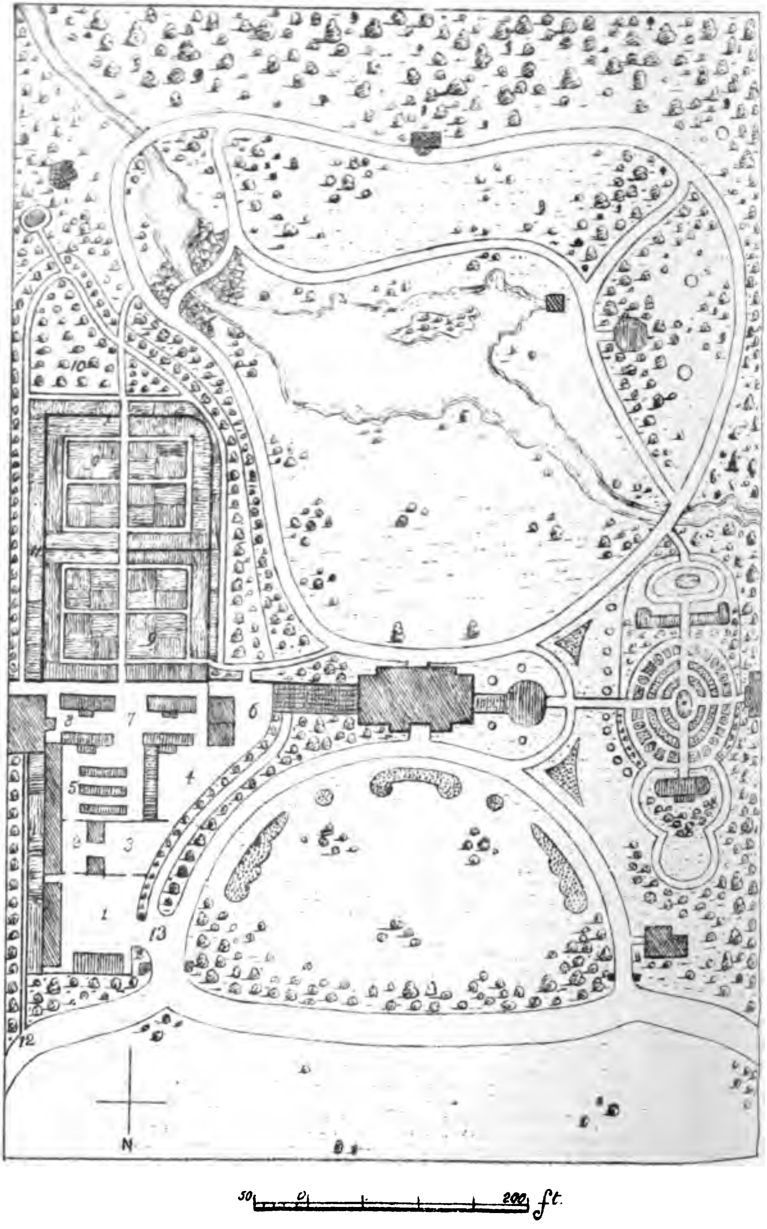
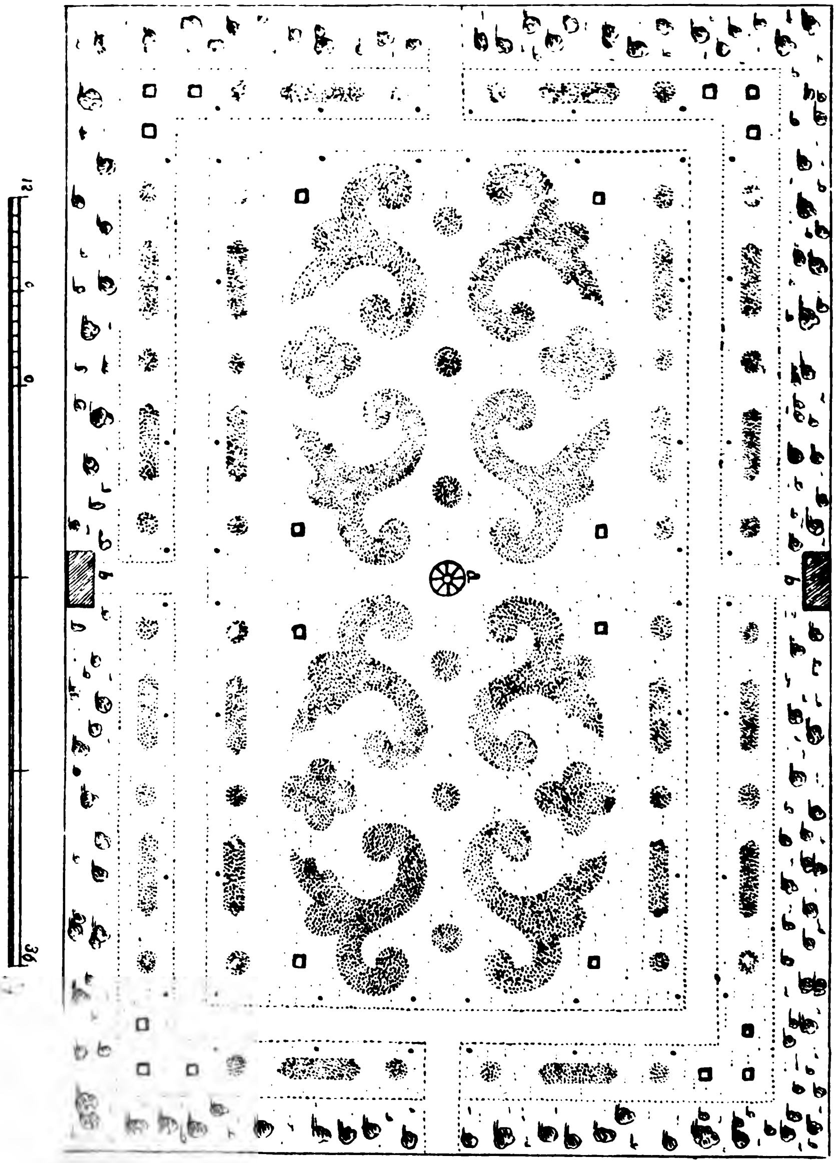
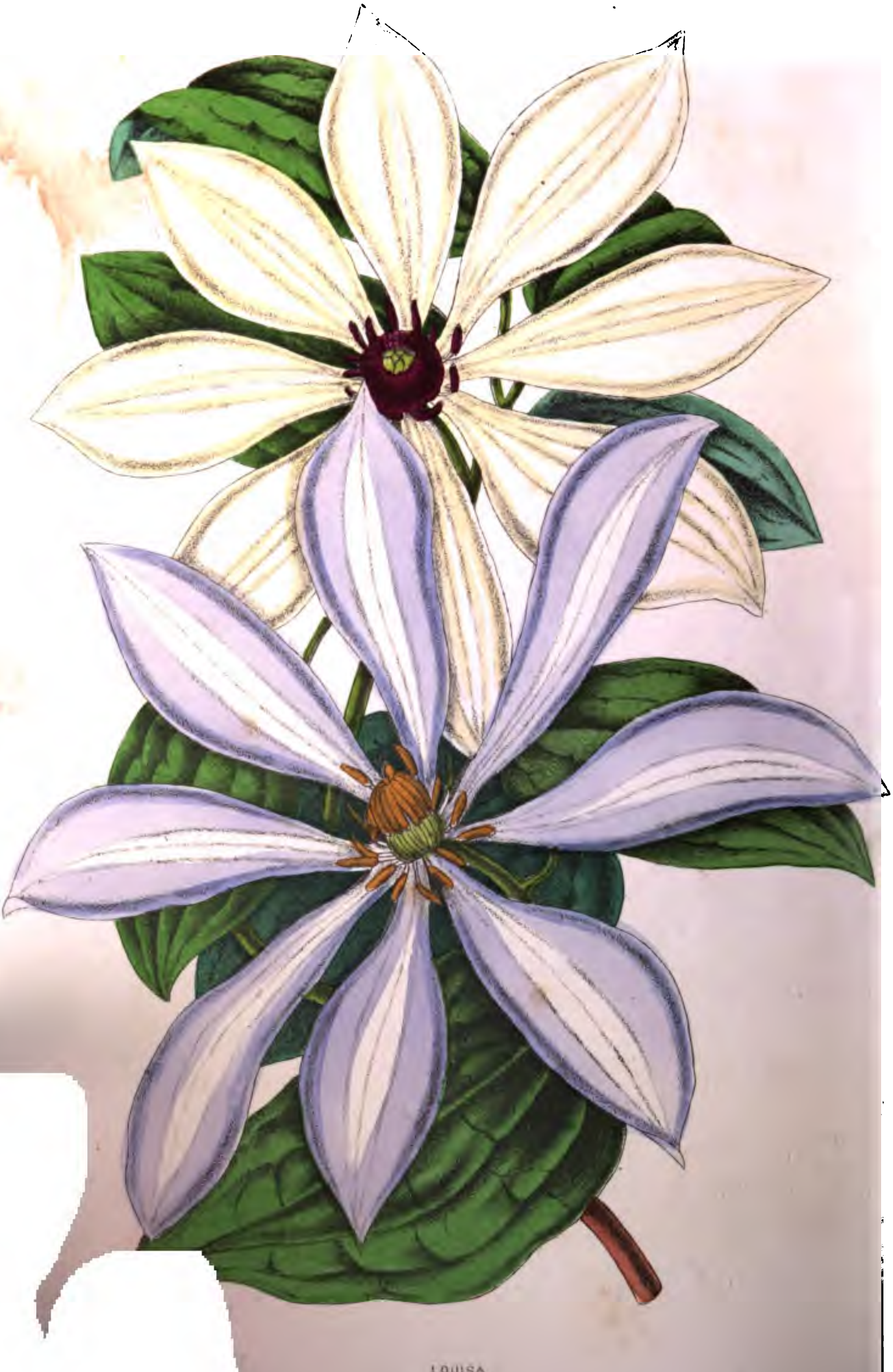


Fig. 11





LOUISA

AMALIA

The Floricultural Cabinet.

OCTOBER, 1856.

ILLUSTRATIONS.

CLEMATIS PATENS, *var.* LOUISA, AMALIA.

ALL the Clematises introduced by Dr. Siebold, whether species or simple varieties, are showy and attractive, from the great size of their flowers, and consequently are desirable acquisitions to our gardens, being quite hardy, and of rapid growth. Of these, *C. patens*, var. *Sophia*, is remarkable for its delicate lilac blossoms; *C. patens*, var. *Amalia*, and *Louisa* (of which figures are given in our plate), are profuse-flowering varieties, the former primrose, with a purple centre, and the latter, pale lilac, with light-coloured stamens; *C. patens*, var. *Helena*, is pure white, and *C. lanuginosa*, light blue flowering, large. All are well adapted for trellises, or training over rustic work, and where a few distinct varieties, as the above, are grouped together, or trained to cover a verandah, they have a striking effect, and remind us of the lovely bowers described by the poet:

> "o'errun
> By vines, and boundless Clematis,
> Amid a wilderness of leaves, where roses peep'd,
> And honeysuckle, which, with trailing boughs,
> Dropp'd o'er a sward, grateful as ever sprung
> By sparkling fountains."

The Clematis flourishes when planted on a *dry* subsoil, in a mixture of peat and loam, and all the varieties may be freely increased by layering the shoots from July to October.

The generic name is from the Greek, *klema*, the climbing tendril of a vine, which this plant resembles in habit.

ON THE PROPAGATION AND CULTURE OF CALCEOLARIAS.

BY MR. W. LODGE, EPPING.

HAVING paid great attention to the cultivation of this class, I herewith forward some remarks on the method of treatment which I have pursued, so as to have plants, in pots, three feet in height, covered with a profusion of their strikingly handsome flowers. As to the propagation of herbaceous Calceolarias, they are readily increased by division of offsets, which may generally be found rooted; in order to have plants to flower well the following year, they should be taken off early in August, planted in four-inch pots, and then placed in a cool frame, where they may be kept till the following spring, by preserving them from frost and being over damp. The half-shrubby and shrubby kinds are readily increased by slips, taken off close to the stems they proceed from. Where an opportunity occurs of keeping closely together plants to propagate from, and they are placed upon a damp floor, or in a damp situation, it has the effect speedily to induce the production of small roots at the lower parts of many of the shoots; these shoots being taken off and potted in small pots in August or September, make fine plants for vigorous bloom the following year. Though slips and cuttings destitute of these infant rootlets will strike if inserted in sandy peat and loam, and placed in gentle heat in a hotbed frame, yet I find the foregoing method much more certain, and much less trouble is occasioned. During autumn and winter my plants so placed afford me a numerous stock of rooted slips to take off, and I keep up my collection of young and handsome plants with little trouble, and am enabled to turn out into the open beds not only my old plants, but any desired quantity of young ones too.

Equal portions of turfy sandy peat, loam, leaf-mould, and well-rotted hotbed dung, well incorporated together for a few weeks before using, is the most suitable compost for growing the plants vigorously. I never have it sifted, but well chopped with the spade, when I use it for potting. A very free proportion of drainage is essential to their success, and I place in small pots one inch deep of broken potsherds, with one inch of moss upon them, the largest pots I give two inches deep of each, upon this substratum the sôil is placed. The Calceolaria imbibes a considerable portion of water by the roots when it is in a healthy condition, to supply it with a fresh element of it is therefore necessary; if there be not a free drainage to allow superabundant water to pass, the soil becomes saturated and sour, which occasions sickliness, and often the death of the plant.

About the middle of February I repot my young plants potted off in August and September, the most vigorous in pots one foot in diameter and ten inches deep. Weakly ones I put in pots half the size for a few weeks, and then repot them into the larger size, as the circumstances of growth require; I bloom my stock generally in pots of this size, but when I see a plant in such a sized pot that would bear a larger I remove it.

After potting I place the plants in a greenhouse upon a moveable stage, which is fixed so that the plants may be about a yard from the glass (the stage is raised or lowered as desired by the turning of a wheel rack, with notch to secure at each end of the stage); here I keep them till they bloom, giving them a free supply of air, to prevent them growing up weakly. The surface-soil in the pots is frequently stirred, so as to allow water to pass through regularly, and evaporation to rise to the plants. The Calceolaria is more susceptible of injury by watering than most plants in general cultivation, so that, after all attention to draining, compost, and stirring the surface repeatedly, it is requisite to attend to a due order in giving a supply, which should be so regulated as to keep the soil moist, not wet. Previous to the plants blooming I frequently sprinkle them overhead with water early in the morning, this keeps the foliage clean on its upper side, and the damp arising to the under side keeps the plants free from the red spider, as well as promotes the rootlets. When in bloom I have a canvas cover over the roof of the house where the plants are, and by keeping them in-doors I have an opportunity of impregnating the flowers and of obtaining seeds. As soon as I gather the seed I have the plants placed out of doors, where they are shaded from the sun from eleven to three o'clock; they push again here and bloom for the greenhouse in October.

BRIEF REMARKS ON THE TREATMENT OF THE POLYANTHUS.

BY TH. T., AN AMATEUR.

A FEW remarks on the Polyanthus may prove useful as a reference for the young amateur (and doubtless there are many) who may be desirous of growing this attractive florist's flower. The situation most congenial to the Polyanthus is a raised border on the north side of a fence or hedge, which during the heats of summer serves as a shade, yet allows of sufficient sun in the morning. Early in the month of September, when the new leaves are two or three inches long, take up the plants, dress them, and plant them in the border, which is prepared turfy loam, rotten sheep's dung, leaf-soil, and a little of the decayed wood from the inside of an old willow tree, if it is to be had. This is a compost which suits better than any other which I have tried, and I have proved several. Water the plants just sufficiently to settle the soil about the roots, and if the weather should prove dry, attend to watering from time to time as they require it, being careful they are not allowed to become too dry. With this exception, they will require no farther care. I do not afford any protection in winter, and although I have a great number, I never have lost a plant from this cause. As soon as April comes in I take up such as have made the finest trusses of blooms, retaining as much soil with the roots as I can, and place them in good-sized pots, give a gentle supply of water, and remove them to a more shady situation to bloom them for exhibition. After exhibition I again turn them into the border. Throughout the following months, until the middle of August, I find it serviceable to guard the plants from the scorching effects of the sun, by sticking in a few branches along the border, which otherwise would prove very injurious. If the weather be very dry they ought to be regularly well watered, or they will be liable to become infested with their great enemy the red spider, which is a destroyer of numbers every season. If this insect should be allowed to take possession of the plants, I find the best remedy to be a good syringing over and under the leaves with strong soapsuds; this is generally successful on the first application. Some prefer to grow the Polyanthus in pits or frames, but thus treated they require much more attention, and are more tender in habit; moreover, I do not find they increase so well under such a plan of treatment.

METROPOLITAN HOLLYHOCK AND DAHLIA. EXHIBITION.

The above exhibition was held at Cremorne Gardens on the 19th and 20th August, at which there were shown one hundred and sixty spikes of Hollyhocks, all beautiful specimens closely set with blooms, many of extraordinary size and good form. The following were the principal exhibitors of this flower:—Messrs. Bircham and Ward sent Solfaterre (lemon yellow, fine), Souvenir, Pourpre de Tyre (rich dark purple), Lemonade, Purple Perfection, Brennus (mottled rose, large), Seedling, Fireball Superb, Standard, Vesta, and Hon. Mrs. Ashley. Mr. Chater sent Lady Middleton, Walden Masterpiece, Saturn, Resplendens, Canary, Autocrat, Beauty of Walden (the best variety shown), Empress (delicate primrose buff, one of the finest), Géant des Batailles, Fanny, and Mont Blanc. Messrs. Paul showed Primrose Perfection, Memnon, Pourpre de Tyre, Narcissus, Mrs. Oakes, Hedenham Rival, Beauty of Cheshunt (rose, extra fine), Solfaterre, White Globe (best white), Glory (rosy scarlet), and Hon. Mrs. Ashley (large, bright rosy pink). Nine spikes: the Rev. C. Fellowes showed Solfaterre Improved (best yellow spike), Lilac Model (best mottled), Fireball Superb, Purpurea elegans (finest purple), Hon. Mrs. Ashley, Mrs. Oakes, Unique (rich carmine), Brennus, and Lemonade Improved. Mr. Grant produced King of Yellows, Eva (light peach, fine), Pourpre de Tyre, Beauty of Cheshunt, Souvenir, Solfaterre, Yellow Model, Seedling, and Hon. Mrs. Ashley. H. Bowler, Esq., furnished Atropurpurea, Hon. Mrs. Ashley, Unique, Joseph Clarke (this was awarded a first-class certificate), Mrs. H. Bowler, Lilac Model, Queen (fine blush), Solfaterre, and a seedling. Fourth, Mr. C. J. Perry. In the class of 24 Blooms (Nurserymen), Mr. Chater and Messrs. Paul showed collections. Of these, the best were Exquisite, Nil Desperandum, Sulphur Queen, Ceres, Atrosanguinea, Rosy Morn, Lilacina, Grandis, Masterpiece, Queen of Buffs, Ruby Queen, Canary, Purple King, Leonora, Lady Middleton, Lilac Queen, Beauty of Walden, Autocrat, Sceptre d'Or, Ignea, Walden Rival (orange and crimson shaded), Lord Jocelyn (cherry crimson), Pourpre de Tyre, Mrs. Oakes, Memnon, Purple Perfection, Mr. Adams (dark salmon, fine), White Globe, Beauty of Cheshunt, Eclipse, Hon. Mrs. Ashley, Blushing Bride, Solfaterre, Charles Baron Improved, Criterion (purple, slightly mottled), Rosy Morn, and Omar Pacha (pale straw and chocolate laced):

In the class of 24 Dahlias (Nurserymen), Mr. Charles Turner showed Sir John Franklin, Colonel Windham, Malvina, Captain Ingram, Incomparable, Sir F. Bathurst, Bessie, Lord Palmerston, Grand Sultan, Amazon, Rachel Rawlins, Harbinger, Sir C. Napier, Lord Bath, Eclipse, Espartero, Sir R. Whittington, and Duchess of Cambridge. Mr. H. Legge sent Admiral, Sir C. Napier, Crimson King, Amazon, Mr. Seldon, Duchess of Kent, Glenlyon, Beauty of the Grove, Mrs. Legge, Robert Bruce, Rachel Rawlins, Duke of Wellington, Magnet, Le Phare, Louisa, Glenny, Port Wine, Roundhead, and Jullien. Mr. Keynes exhibited Lord Palmerston, Lollipop, Sir F. Bathurst, Lady Folkestone, Cœur de Lion, Malvina, Sir J. Franklin, Rachel Rawlins, Dr. Gully, Bessie, Reginald, Archbishop of Canterbury, Admiral Dundas, Lord Bath, Sir C. Napier, Sebastopol, and Annie. In the class 24 Dahlias (Amateurs), Mr. Grant exhibited Miss Caroline, Pre-eminent, Lord Palmerston, Fanny Keynes, Malvina, Robert Bruce, Cossack, Amazon, Lady Mary Labouchere, Lilac King, Lord Bath, Yellow Beauty, Sir C. Napier, Lollipop, The Nigger, Sir J. Franklin, Bessie, Miss Burdett Coutts, and Duchess of Wellington. In the class of 12 Blooms, J. Cook Esq., had Salvator Rosa, Lollipop, Rachel Rawlins, Constancy, Beauty of the Grove, Beauty of Slough, Duchess of Kent, Miss Caroline, Empress, Sir F. Bathurst, Colonel Windham, and Essex Triumph. Mr. Holmes showed Lord Palmerston, Caroline, Sir C. Napier, Sir J. Franklin, Cherub, Diadem, Yellow Beauty, Sir F. Bathurst, Miss Burdett Coutts, Bijou, The Nigger, and Lollipop. The Rev. C. Fellowes sent Fanny Keynes, Miss Caroline, Mrs. Wheeler, Lilac King, Rachel Rawlins, Lord Bath, Marion, Amazon, Miss Burdett Coutts, The Nigger, Lollipop, and Duchess of Wellington. C. J. Perry, Esq., had Miss Caroline, Beauty of Slough, Archbishop of Canterbury, Rachel Rawlins, Ringleader, Lollipop, Annie Salter, Magnet, Yellow Beauty, Mrs. Rawlins, Annie, and Bessie. Of Fancy Dahlias, 24 Blooms (Nurserymen), Mr. Keynes produced Charles Perry, Conqueror, Polyphemus, Carnation, Lady Granville, Jonas, Empereur de Maroc, Mrs. Hansard, Miss Frampton, Duchess of Kent, Mrs Spary, Pigeon, Model, and a few seedlings. Mr. C. Turner had Eugenie, Butterfly, Marvel, Pigeon, La Vogue, Inimitable, Enchantress, Duchesse de Brabant, Comet, Empereur de Maroc, Mrs. Hansard, Admiration, Miquette, Kossuth, Laura Lavington, Phaeton, and Gloire de Kain. Mr. H. Legge sent Butterfly, Triomphe de Roubaix, Vasco de Gama, Baron d'Arme, Malvina, Attraction, Mrs. Hansard, Annie Miquet, Duchess of Kent, Princess Charlotte, Snagretta, Laura Lavington, Gloire de Kain, Phaeton, Pigeon, together with their agreeable fragrance, and the profusion with which they are borne in spring and autumn, combine to make this a desirable acquisition to all grounds of limited dimensions. *Polygala Chamæbuxus*, although not so showy as the foregoing, is an evergreen of dwarf habit, producing abundance of pretty white and yellow flowers. Its treatment should be like the Daphne, but is best grown as single specimens. Several of the dwarf Berberises are not to be forgotten, as *Berberis Darwinii* and *B. empetrifolia*, which are charming little shrubs. They do well in light soil, in beds open and dry, where they can have plenty of sun. The profusion of their yellow blossoms, borne for a length of time, give them a lively aspect. *Gaultheria Shallon* is a plant which may, by judicious pruning, be kept to the height of nine inches or a foot, two or three plants spreading over a considerable bed, extremely bushy, and in summer covered with long and graceful spikes of delicate pink flowers; it grows luxuriantly in loam, with the addition of a little heath-mould, and may be freely propagated by layers. *Cotoneaster microphylla* and *C. rotundifolia* command attention when planted in small beds, being ornamented by a profusion of white flowers in April and May, which are succeeded by bright scarlet berries, that remain on all winter with the leaves. It is a good plan to lay pebbles over the bed to support the branches, which otherwise are splashed with dirt in heavy rains. *Hypericum calycinum* is an old favourite, too well known to need description, and is a fine plant for a small bed, being a free bloomer, with large and attractive flowers. Many of the dwarf Cistuses and Helianthemums are well suited for our purpose, but are not cultivated so extensively as they merit; they require nothing but a light loamy soil, and may be increased either by cuttings or seeds. A few species of Genista, as *G. triquetra* and *G. sagittalis*, may be appropriately grown in beds, and the same may be said of *Cytisus purpureus;* all are dwarf and showy, requiring no attention after planting. There are many American or bog plants which are capable of being cultivated to perfection in beds, as Kalmias, Ledums, Andromedas, Vacciniums, Mahonias, and others, but my object being to name such as are not often grown in small beds, I pass them by, as well as many handsome half-hardy plants, which, although very handsome, as the genus Leycesteria and Fuchsia, I must reserve for some future occasion.

ON THE CULTURE OF LILIUM LANCIFOLIUM.

BY MR. F. HARDWICH.

TOWARDS the end of November, 1854, I prepared a bed for planting the bulbs of this beautiful Lily; the bed was four feet wide and nine feet long, composed of common garden soil, well dug and broken up with a fork, and without any manure, which I believe to be rather disadvantageous in the culture of this plant. The bed was afterwards raked level, and the bulbs planted on the surface, spreading out the fibres every way, with a distance of fourteen inches between each; they were covered with a light mixture of fine sifted mould and sand, to a depth of four inches from the crown of the bulbs, and the surface neatly raked. After the stems were quite dead, in the following autumn, I took off the surface compost without disturbing the bulbs, and laid fresh sandy soil over them to the depth of four inches, and this year I have been favoured with a splendid show of their lovely blossoms, and am decidedly of opinion that this plant succeeds better and has a more vigorous growth, thus treated, than when kept in the greenhouse. It is a most ornamental bulb, the flowers possessing also an agreeable fragrance, and should be more extensively grown than it is, meriting a place in every flower garden. I have successfully cultivated several other kinds of Japan Lilies out of doors with much success. On another occasion I may forward a few observations for your useful Magazine.

ON HARDY HEATHS.

BY MR. JOHN TAYLOR.

There are few shrubs which look neater, or are so well adapted for planting in the flower garden, than the above, and their congeners; they are recommended also by the length of time they continue in flower. They will flourish in sandy peat, or in light loam and sand, though the former is more natural to their habits. They should be planted on a dry subsoil, and in an open situation; under the shade of trees they never do well. In beds, let them be planted two feet apart each way; they may be put in any time from October to May, but the earlier in autumn the better; place the dwarf-growing kinds outside, and the tall varieties in the centre. Peg down the spreading dwarf species, and neatly tie up the rest to small stakes, until they are quite established, or they may be twisted or injured by winds. As they always look best when bushy, as soon as spring arrives let them be topped down, which will induce a close growth. When they are growing they will require to be well watered, and the surface of the beds should be frequently stirred with the hoe, and all weeds kept down. To display them with advantage they must be allowed to grow somewhat closely together, yet not so near as to prevent a free current of air, and care should be taken to keep them separate from each other. Each year the bed should have a good top-dressing of peat soil, if it can be procured, which will be of signal benefit, and all dead wood should be cut out. To increase them, the best plan is to peg down some strong outside shoots, placing over them a small bank of peat, which may be done in winter or spring; in a year they will make nice plants. They may also be raised from seed, which should be sown, as soon as ripe, in pots or shallow pans, well drained, filled with finely sifted sandy peat; place them in a cold frame or pit, until the plants are ready for pricking out. The following are all growing in my garden. *Erica carnea*, flesh coloured, blooming in February and March, growing nine inches high. *E. ciliaris*, pink, large and handsome, July, height twelve inches. *E. cinerea*, purple crimson, July to September, nine inches. *E. cinerea alba*, white, twelve inches. *E. Mackayii*, pink, August, twelve inches. *E. tetralix*, rosy pink, July and August, twelve inches. *E. tetralix alba*, white, August, twelve inches. *E. vagans*, pink, August to December, fifteen inches, a fine free-flowering variety. *Calluna vulgaris*, pinky crimson, August and September, nine inches. *C. vulgaris, flore pleno, foliis variegatis*, a very pretty variety. *Dabœcia polyfolia*, rich purple, flowers large, August to December, two feet. *D. polyfolia alba*, white. *D. polyfolia atropurpurea*, dark purple-crimson.

REMARKS ON ALPINES.

BY IOTA.

A COLLECTION of Alpine plants, properly speaking, comprises such as are natives of alpine or rocky places, but there are many which are commonly classified together with true Alpines which have no claim to the term, although they may succeed well on our rockwork; some grow in our woods, by the sea-side, and many in bogs. Most of the true Alpines are very hardy, and in their native country are covered with snow for some months in the year, and grow in sandy or peat soil, among the crevices of rocks. I always, however, find they succeed better under cultivation when grown in pots, than when planted in rockwork, or along shady borders; and in winter it is very essential to guard them against wet, for which reason they should be provided with the shelter of a cold frame, and the pots plunged in ashes, which also prevents the attacks of worms. The soil I use for the entire class is a mixture of peat and sandy loam, with a little silver sand. There are no plants which are sooner destroyed by excess either of moisture or dryness, for which reason they ought never to be subjected to indiscriminate watering. The locality chosen for their summer station should be one with a north aspect, where the sun can reach them early in the morning and late in the evening; but the shade and drip of overhanging trees must in all cases be avoided. November is the proper time for placing them under glass, at which time they may be examined, and if any are found infested with worms, let them be carefully picked out, without disturbing the boles. When placed in the frame, they will require all the air possible when the weather is fine, and constant attention must be given to avoid damp. They are best increased by division of the roots, although some are annuals, and must be perpetuated by seed. The following is a list of a few of the most ornamental and interesting Alpines for a small collection.

Adoxa moschatella
Ajuga alpina
—— reptans, fol. variegatis
Alyssum montanum
——— saxatile
————— fol. variegatis
Anemone alpina
——— Japonica
——— nemorosa cærulea
——— sylvestris
——— vernalis
——— vitifolia
Antennaria alpina
Aquilegia alpina
———Skinneri
Arabis bellidifolia, fol. variegatis
—— lucida, fol. variegatis
Arbutus Uva-ursi
Arenaria saxatilis
Armeria alpina
——— maritima
——— montana
Asperula odorata
Aubrietia purpurea
Bellium bellioides
——— crassifolium
——— minutum
*Briza minor
Bulbocodium vernum
Calystegia pubescens, fl. pleno
Campanula carpatica
——— nobilis
——— alba
——— pulla
————— fl. albo
——— pumila
——— rhomboidea, fl. pleno
Cardamine pratensis, fl. pleno
Cheiranthus Marshalli
Convallaria majalis, fl. pleno
Cornus Canadensis
Coronilla montana
Corydalis lutea
Cyclamen Coum
———Europæum
———repandum
———vernum
Cypripedium calceolus
——— parviflorum
——— spectabile
Dactylis glomerata, fl. pleno
Dielytra eximia
——— spectabilis
Digitalis lutea
Draba aizoides
Dracocephalum grandiflorum
————— Ruyscheanum
Dryas octopetala
Elichrysum arenarium
Epilobium hirsutum, fol. variegatis
Epimedium alpinum
——— violaceum
Epipactis grandiflora
——— latifolia
Erica cinerea
————— fl. albo
—— tetralix
Eriophorum alpinum
Eryngium alpinum
——— maritimum
Erythronium dens-canis
Fragaria monophylla
Gentiana acaulis
——— asclepiadea
——— verna
Geranium pratense, fl. pleno
Gnaphalium arenaria
Hepatica, vars.
Iris pumila
Lamium maculatum
Leucojum autumnale
———vernum
Linaria cymbalaria
————— fol. variegatis
———hepaticifolia
Lotus corniculatus, fl. pleno
Lysimachia nummularia
*Mesembryanthemum crystallinum
*————— tricolor
Omphalodes verna
Ophrys apifera
——— aranifera
Orchis fusca
—— morio
—— ustulata
Orobus vernus
Oxalis Deppei
—— floribunda
Papaver alpina
Phlox alpina, var. divaricata
——— var. procumbens
——— var. repens
——— var. verna
Polemonium gracile
———reptans
Polygonatum verticillatum
Polygonium vaccinifolium
Potentilla reptans

Primula Altaica
——— cortusoides
——— denticulata
——— farinosa
——— minima
——— Scotica
Pulmonaria officinalis
Pyrola rotundifolia
Ranunculus amplexicaulis
Rubus arcticus
—— Grœnlandica
Saxifraga aizoides
——— aspera
——— ciliata
——— granulata, fl. pleno
——— oppositifolia, var. major
——— stellaris
——— umbrosa, fol. variegatis
Scilla autumnalis
—— verna
Sedum acre
—— album
—— cæruleum
—— sexangulare
—— Sieboldii
Sempervivum arachnoideum
Sempervivum montanum
———— tectorum
Silene alpestris
Sisyrinchium grandiflorum
Soldanella alpina
Statice sinuata
Stipa pennata
Thalyctrum alpinum
Thymus Azorica
——— serpyllum, fl. albo
————— tomentosum
Trifolium repens, fol. atropurpureo
Tussilago fragrans
——— farfara, fol. variegatis
Vaccinium uliginosum
———— vitis-idæa
Valeriana dioica
Veronica repens
——— saxatilis
Vinca herbacea
—— major
———— fol. variegatis
Viola cucullata
—— obliqua striata
—— pyrolæfolia

Those marked with an asterisk are annuals.

To the above might be added many of our indigenous Ferns and Mosses, all of which are attractive in an Alpine collection, and require but little care in their treatment.

ON THE CULTURE OF SWEET-SCENTED VIOLETS.

BY MR. JOHN HUNT, CROOK, DURHAM.

It may be of use to your readers to detail the method which I pursue in the treatment of Sweet-scented Violets, especially as I have not seen a paper on the subject from any of your contributors in the late numbers of the *Cabinet*, to which I have subscribed for some time. I consider the Neapolitan Violet to be the best sort in cultivation, but it unfortunately requires protection in winter.. To treat them with advantage, about the end of April take the old roots and part them, plant them out in beds on a north or north-east border, there to remain till the end of September; then take them up and pot them in thirty-two-sized pots, in a mixture of vegetable mould, road-scrapings, and loam; if not sufficiently gritty, add a little coarse river-sand. Place a tile in the bottom of each pot, likewise a handful of potsherds, broken very small. Water them, and plunge them in a frame in cinder ashes, elevating them to within a few inches of the glass; draw off the lights in fine dry weather, and protect them from rain and damp; they will flower profusely the whole of the winter. They will also bloom in a greenhouse, provided they are placed in a dry airy situation. This kind has a double flower, light blue, and is sweet scented. The New Russian Violet is, without exception, the best ***hardy sort*** we have, as it blooms profusely the whole of the winter in the open ground in any situation, which makes it very desirable to cultivate. Bedding them out every two years, about the end of April, in a dry soil, is quite sufficient; they require less room than many other kinds, as they make but few runners: a large, single, purple flower, very fragrant. The Banksian Violet has a sweet perfume, flowers single, purple, but not so profuse in blooming as the former. It requires to be planted on a warm border under a south wall, in March or April, and attended with water in dry weather; it will flower early in autumn. Several other varieties might be enumerated, but they are less worthy of notice.

REMARKS ON THE TREATMENT OF THE GENUS HERMODACTYLUS.

BY T. SMITH, BENSON.

This genus is very nearly allied to the Iris, and the species require very similar treatment to some of the species of that genus. The common Snake's Head was formerly known as *Iris tuberosa,* but now called the *H. bispathaceus;* I have grown this and *H. longifolius* with some success, and the mode of culture which I pursue is as follows:—I plant the tubers in a soil composed of two parts turfy peat, one part of white sand, and one part of completely rotted stable manure, all well rubbed together, but not sifted, and put them in six inches deep, placing a little of the finest soil about them at the time of planting, and so form the beds that the compost shall extend below the roots to at least nine inches deep. As they are hardy they require no protection, except when in bloom, which happens so early in the season, that many flowers are destroyed by the spring frosts. It is, however, always necessary to plant the roots in an open situation. The only time in which the roots can be removed with safety is when they are in a quiescent state. The foliage begins to die down about the end of May, and continues to do so until the middle of June, when the roots may be dug up, and kept in sand in a moderately dry place for about a month, and afterwards planted, as before mentioned. If grown in pots they may, of course, be removed at any time; but they do not bloom so well when thus treated. Care should be taken not to break off the digitals of the root in taking up and planting, for if that happen they will be prevented from flowering. Something of this kind occurs when the roots are left undisturbed the whole summer; for, being fleshy, the worms and various insects are attracted to them, which gnaw and separate the digitals, if they do not destroy the roots. There would, however, be no chance of the plants living long in a cold adhesive soil where worms do not abound, a light soil being essential to their proper cultivation.

ON THE CULTURE OF CHOROZEMAS.

BY F. W. E., EXETER.

It is generally found a matter of no small difficulty to produce large well-grown specimens of this and other valuable plants of New Holland; many specimens are either weak through being drawn, or, what is worse, scarcely make any progress at all. The following appear to me to be the probable causes which militate against successful cultivation.

First, being placed at too great a distance from the glass, which always tends to draw them up weakly; the atmosphere too close and damp, the sure consequence of the want of a free circulation of air or want of light. Secondly, improper soil, careless potting, or incautious watering. By keeping these matters in view, and carefully avoiding to practise them, I have succeeded in growing plants of this description to a degree of excellence far surpassing my expectations. The soil in general recommended is an equal mixture of very sandy peat and loam; this composition for plants like those I am now speaking of does not fully accord with my experience. I select a quantity of peat, carefully avoiding such as does not contain a good deal of fibre, or that has not a considerable portion of white sand equally mixed with it, rejecting as entirely worthless all such as inclines to be stiff or very sandy; to this is added no more than one-fourth of mellow sandy loam; the whole is then carefully blended and examined, and if the grains of sand are found not to touch, or nearly so, throughout the whole, so as to give it a greyish cast, what more sand is thought sufficient is thrown in and properly mixed up. The soil is never sifted—I avoid this practice, as taking out the most essential part, namely, the fibre—but after being well broken up with the back and edge of the spade, what lumps remain too large are reduced with the hands. Any soil naturally retentive, or that inclines to become close, is always objectionable for these and, in short, all fine-rooted plants. On their first removal after striking, the plants are put into sixty-sized pots in the above soil, being very particular in putting not less than two inches good drainage at the bottom of each; they are afterwards removed again to the propagating house, being first gently watered with a fine rose; here the atmosphere is congenial to them in this state, and will consequently cause the roots to push, and prepare them for a removal into an atmosphere more suited to their constitution, which should take place in about a week, as the young roots will have taken hold of the new soil. The next situation sought for them is a pit or frame, where they can be placed near the glass, and shaded from the hot sun; in fine weather air should be admitted freely, and the plants carefully watered every evening. They are finally placed in the greenhouse, as near the glass as possible; but I take care not to place them opposite a ventilator where the air is admitted, as this would prove injurious to them, the house requiring to be freely ventilated; if, however, the air is admitted from the roof they sustain no injury. The house should be shut up in the evening. As these plants suffer from over-potting, it is necessary here to caution against so dangerous a practice. One thing that greatly accelerates the growth, and tends to ensure success in cultivating these plants, is to avoid setting the pots where their sides are likely to be much dried by the sun; this practice materially injures the young roots, and consequently weakens the plant. It is well to lay a little sandy gravel for the pots to stand on; this, when watered, retains a degree of moisture and prevents drought, and consequently the sides of the pots cannot dry; it moreover feeds the leaves, and strengthens the whole plant; but when this is practised it is necessary to observe the strictest caution in watering. The advantage of keeping the floor damp, and employing other materials for that purpose, is only available in summer, and should not therefore be practised in the winter, when the plants are not growing. In the winter it is not the growth of the plants that is the cultivator's study, it is rather how he shall best keep them alive until the return of the growing season, and of all to be thought of on this head, perhaps the first and most important is the preservation of their roots; to secure these, watch hourly against too much moisture arising from over-watering, and take care that the drip does not fall into any of the pots. In damp weather, or when moisture begins to appear, a little fire may be applied with advantage in the evening, and in the morning after, if the weather be favourable, admit fresh air for an hour or so, carefully and effectually observing to keep out at all times cold winds and frost.

Potting is in general looked upon as of minor importance, but a badly potted plant, however healthy when shifted, never thrives. Where the soil is compact, and properly put about the roots, the plant will grow freely and root well; but, on the other hand, if the soil is put in loose, or left in holes, the plant languishes, and ultimately dies if allowed to remain in that state; it is therefore necessary to place the soil compactly and properly about the roots when potting, never forgetting to effectually drain every pot as before directed. The propagation of these plants is a difficulty which every gardener acknowledges and experiences, but even this becomes comparatively easy when steadily and attentively followed up. The few following hints will be useful. The cuttings should be taken off while the wood is young, and carefully prepared; take off the bottom leaves with a sharp knife, and make a clear cut just through the joint. The cutting pot should be drained, and filled to within two inches of the top with the soil before spoken of, on the top of this put a layer of clean white sand, in which plant the cuttings, making a little hole for their reception with a small stick; when the pot is full, give them a steady watering with a fine rose, after which place a clean glass over them. In this state they may be removed to the propagating house (where the temperature should not sink below sixty-five degrees), and plunged into a little sawdust. They should be shaded from the sun. The glass should be wiped quite dry every morning, and the cuttings, when necessary, carefully watered. The object of filling the pot up to within two inches of the top with soil is to enable the young roots, as soon as they are formed at the bottom of the cuttings, to take off at once into the soil, which greatly strengthens them, and prevents the check which would ensue when potted off, if allowed to form their roots wholly in the sand. Seeds of many of the species ripen in abundance, and as they in general vegetate freely, plants may be readily increased from them. They may be sown in any light soil, carefully avoiding such in which dung is incorporated; placed in a gentle heat, securely shaded from the sun, and judiciously watered, they will come up well; and when four leaves are formed they may be potted off in the manner and with the same description of compost as directed for cuttings.

ON THE TREATMENT OF HYACINTHS, WITH REMARKS ON THEIR CULTURE BY THE DUTCH.

BY E. L.

Having had some experience in the treatment of this bulb, and a good knowledge of the Dutch system of culture, I forward you a few hasty remarks for the *Cabinet*. The mode in use in Holland has been pretty clearly laid down in a work by St. Simon, published at Amsterdam some years ago, in which everything that can be, and a great deal more than need be, said on the subject is contained; as it is now a scarce work, perhaps it may not be accessible to many who would otherwise be glad to consult it.

The compost used at Haarlem is rotten cow-dung, decomposed leaves, and fine sand. In making this compost, the Dutch gardeners prefer the softer leaves of elm, lime, and birch, rejecting those of oak, ash, chestnut, or beech, which do not rot so quickly. The cow-dung is from stall-fed cattle, without any mixture of straw or other litter. The sand is procured in the neighbourhood of Haarlem, where the soil is a deposit of sea-sand upon a compact layer of hard undecayed timber, the remains of an ancient forest which has been submerged by the sea. The best sand is that procured by digging some depth. St. Simon imagines this sand possesses some peculiar virtue by the admixture of salt, and in this he is probably correct. The leaves are laid in a large heap, in a situation not much exposed to the sun, and not liable to stagnation of water, which is carefully drained from them. When fit for use, the compost is made thus: first they place a layer of sand, next dung, and then leaves, each stratum about eight inches thick, and they are repeated until the heap is about six feet high, a layer of dung being uppermost, sprinkled over with a little sand, to prevent the too powerful action of the sun upon it. After the heap has lain about six months, it is mixed, and thrown up afresh, in which state it remains some weeks, to settle, before it is carried to the beds. This compost retains its qualities about six or seven years, but the Dutch avoid setting Hyacinths in it two years successively; in the alternate years they plant Tulips, Jonquils, Narcissuses, Crocuses, Fritillarias, Irises, etc., in the same beds; neither do they plant Hyacinths in the compost the first season, when the fresh manure might be injurious to them. The choice bulbs are taken up every year, and the soil that lay amongst the fibres is then carefully brought up to the surface. The beds should be deep enough to prevent the fibres coming near the subsoil. I believe that English sea-sand will suit the Hyacinth as well as that of Haarlem, and that old tan, if thoroughly decayed and pulverized, may be used instead of leaves, and I know some Dutch gardeners who use it themselves. The cow-dung should be as free from straw as possible, and without the admixture of any other kind, and completely decayed before it is used. The mischief occasioned by the fermentation of half-rotten straw, and the too great heat of horse-dung, etc., is a contagious decay amongst the bulbs, which will spread throughout the bed.

The beds should be made about three feet in depth with the compost, consisting of about one-sixth of rotten leaves or tan, two-sixths of pure sand, and three-sixths of rotten cow-dung. The compost should not be trodden down hard; but, the bed being opened, the bulbs may be ranged, and then carefully covered from three to five inches deep, but not pressed into the compost. If the situation be wet in winter, the beds may be raised six inches, or even more, above the level of the soil, to prevent the evil effects of moisture. The Dutch cover their beds with dung or tan in winter, which they put on or take off, according to the state of the weather. The compost requires no additional manure till the expiration of about six years, when it should be mixed with fresh sand and dung, as before. When the Hyacinth leaves begin to wither, the bulbs should be taken up, the leaves cut off, and the bulb laid on its side, covering it lightly with the compost, about two inches thick; in this state they should remain about a month, then taken up in dry weather, and exposed to the open air some hours, but not to a powerful sun. They should afterwards be carefully examined, and all the decayed parts removed by a knife. The bulbs should be placed in the store room, which ought to be airy, about the end of June; they must not be suffered to touch each other, and should be frequently examined, in order to remove those which may show fresh symptoms of decay. They will require keeping in a dry, cool, airy room; if damp westerly winds prevail, the ventilators should be kept closed. Before they are replanted in autumn, they should again be carefully examined, and all decayed parts and withered coats removed.

My experience prompts me to say that those who will take the trouble of following these hints may produce Hyacinth bulbs equal to those imported from Holland.

ON THE TREATMENT OF DIPLADENIA CRASSINODA.

BY MR. W. THOMAS, ST. HELEN'S.

THIS is one of the most ornamental of our stove climbers, the management of which is but imperfectly understood; probably, my plan of treatment may be of service to your readers, and is as follows. If propagated from cuttings, I select such as are about three inches long, slipping them off with a spur, and insert them in sandy peat, in a well-drained pot, covering them with a bell-glass, and then plunge the pots in tan, or any brisk bottom-heat. They will not bear much water, being very liable to damp off, it must therefore be administered judiciously. When moderately furnished with roots, I pot off singly in small-sized pots, using decayed leaf-mould and good loam with silver sand. A warm and moist situation for the young plants must be chosen, and care taken to shade them from the sun, until they are established. I find they do well in a hotbed frame, shaded with canvas. I shift the young plants, as often as they appear to require it, into a larger size, and it is well to perform this operation in time, so that they do not become at all root-bound. Early spring is the best time to put off the cuttings; by winter they will become nice strong plants, and will succeed far better than any taken off later in the year.

Good healthy plants intended for blooming the same summer I treat as follows. I turn the plant out of the pot, and shift it into one considerably larger, say ten inches in diameter, and pot with the same description of compost as for the young plants, excepting the addition of some small portion of well-decomposed stable manure and a few bits of charcoal—the latter ought never to be omitted; I carefully avoid breaking the ball of earth, and press the fresh compost pretty firmly around it. I next tie the shoots to the trellis or fan, regularly training them as they make progress. If a small-sized trellis is made use of, and a larger one is intended afterwards, observe to keep the shoots all on one side, or there will be considerable difficulty in removing them, and the plant is apt to be damaged. As soon as sifted I plunge the pot in a brisk heat, from 80° to 90° will not be too much, keeping the house from 70° to 85°. When the weather is bright I use the syringe freely in the evening, but am careful to avoid soddening the soil, and never water it at the roots until it has become dry; the hot noonday sun should be kept from the plant by a timely shading. Under this management the Dipladenia prospers, and soon fills the pot with roots; when this occurs, I again shift into a twelve or fifteen-inch pot, and fix the trellis, training the shoots over it to the best advantage for flowering. I then replunge the pot, and keep it in a warm moist atmosphere; under such circumstances it will rapidly progress, and by the end of June it will make a fine display, and will have covered a trellis of onsiderable size. When coming into bloom, I occasionally give a little manure-water, which will be found to increase the size of the flowers and the strength of the plants. If kept in a moist stove it will bloom throughout the summer, but I always find that a removal to a cooler temperature, as of a conservatory, soon puts a period to its beauty. For this reason I never remove my plants to the greenhouse or conservatory, but bloom them in the moist stove, where the roots have plenty of bottom-heat. When summer is over, and the bloom gone off, I begin to limit the supply of water, which will be of service in maturing the wood; from November until the end of January I give very little, the plants requiring to be maintained in an inactive state through the winter months.

Under the foregoing treatment I have had handsome specimens, covered with blossoms from June to August, and I find young plants produce flowers and foliage much larger, and in greater number, than those which have been already bloomed.

ON GROWING GREENHOUSE PLANTS IN PITS OR FRAMES.

BY A NOBLEMAN'S FLOWER GARDENER.

It appears to me that the only purposes to which greenhouses, constructed according to the present prevailing mode, should be devoted are those of displaying plants during the period at which their flowers are opening or expanded, and preserving them in the winter season. Greenhouse plants and a number of tender annuals, which constitute some of the principal ornaments of our conservatories in the summer, are too seldom grown with such success as to appear to advantage from any and every point of view. Deficiency of air and light is doubtless the cause of this inferiority. In the greenhouse, notwithstanding all the cultivator's efforts to place the plants so as to leave a proper space between each, this is confessedly impracticable, without transferring a large proportion of them to the open air. For such as happen to be removed to the latter situation, necessity enjoins that they should be crowded together as closely as possible, in order to screen each other from the powerful rays of the sun, as well as from its evaporating action upon the soil in which they are potted.

Perhaps some objections may be brought forward against both the greenhouse and the open air for the summer growth of the hardier kinds of plants requiring artificial culture. Only a few of those which refer to the former of these positions need here be urged. What I have already said respecting the insufficiency of solar light must, with regard to some plants at least, be slightly modified. Heaths, for instance, appear to want occasional shading, when the sun's rays are very violent; but most other greenhouse plants would endure, and flower more freely under a far greater degree of light, provided their roots were sufficiently excluded from the influence of the sun, and prevented from becoming too dry. It is their confinement in pots, the exposure of these latter to the solar beams, and the inability of the culturist to keep them duly moist under such circumstances, that causes the plants to look yellow and sickly; and not, as is frequently presumed, the agency of light, except where this is poured upon them suddenly after they have been confined for some time in comparative darkness. To afford as much protection as possible to the roots, plants of this nature should all stand on the same level, and their individual growth should be such as to secure the necessary umbrage to their own roots. Neither of these ends could be accomplished in the greenhouse; for even a level stage placed near enough to the glass would have an extremely unsightly effect, and materially check the circulation of air. From considerable experience and attentive observation, I have found that the surest way of obtaining perfect specimens of greenhouse plants is to place them during their growing season within a foot of the roof, to remove temporarily the lights or sashes, merely replacing them in cold weather, or when heavy rains are expected to fall, and throwing a covering of thin canvas over the framework of the house when the sun is very bright. This last operation would not be requisite to the plants in a natural state, but, from being long kept in pots, their acquired habits would, under the treatment above named, demand this or some similar precautionary measure in the early stages of their development. Such canvas would mitigate the sun's influence fully as much as the thickest glass, while its perviousness to air at once decides its greater suitability. Further, each plant should be elevated at least two feet above the floor or stage.

This is perhaps one of the most strikingly beneficial systems of management which the aspiring cultivator can follow. Assuming that the house in question has front and end moveable lights, when these are thrown open, it is not easy to conceive a more thorough circulation of air between, around, and through all parts of the plants than would thus be ensured. Frames, besides being better adapted for carrying out this plan and supplying much greater facilities for its execution than greenhouses, are infinitely more economical, and can be kept in any private part of the garden. This plan is applicable to all the plants that are ever grown in a greenhouse. As there are few cultivators who do not possess frames, and these being very generally unemployed during the summer months, no inconvenience will be created by the plan I have proposed; in fact, a saving of trouble, on account of frames requiring less attention, and being altogether easier to manage—and what is of still greater importance, the attachment of a very considerable additional value to the plants—undoubtedly attends the application of this system. Such plants as Cockscombs and Balsams not only thrive best with but actually require frame culture. That humid heat, constant proximity to the glass, and frequent shifting in which they delight cannot so well be supplied and attended to in any other situation. Frames, indeed, should be regarded as summer nurseries for the greenhouse, to which last structure no plant should be introduced that has not gone through a regular preparation in the first. Under this system of management we shall find many plants flourish in a manner far superior to what they did under the old routine of greenhouse culture alone.

NOTES ON THE BOTANY OF THE MONTH.

BY MR. EDWARD SHEPPARD, BURY.

Few pleasures afford more true gratification to a contemplative mind than an autumnal morning's ramble; each season furnishes its own enjoyments, and has its separate votaries, but there are accompaniments to that of autumn, independent of the peculiar temperature of the air, which are singularly impressive. It is, however, the woodlands that now exhibit the most strongly marked character; the leaves turn yellow, red, or various shades of brown, and at length falling, by degrees cover the earth with a thick carpeting, though the Oak and Beech, with a few deciduous trees, retain their dead leaves till spring. An old writer has observed truly, "When I see leaves drop from their trees in the beginning of autumne, just thus, think I, is the friendship of the worlde. Whiles the sap of maintenance lasts my friends are abundant; but in the winter of my need, they leave me naked. He is a happy man that hath a true friende at his need: but he is more truly happy that hath no need of his friende."

Hips and haws now ornament the hedges; the berries of Bryony and Privet, of the Berberry and Blackberry, Holly, and Elder—from which is made the famous wine of Old England's peasantry—with Sloes, and the purple or crimson fruit of the Nightshade tribe, are in great plenty, and besides affording a harvest to our feathered tribes, make up in some measure for the absence of many of our native floral beauties. Not alone on the land, the fair sward, and in hedgerows are we to look for pleasing forms of the Creator's skill; but if we take a ramble along our coasts, we perceive that on "the shell-strown borders of the ever-rolling ocean" the botanist may discover objects of wonder and delight. Of submarine plants our coasts (particularly the western) furnish a great variety, many of which are very beautiful, and particularly remarkable for the fineness of their texture, as well as the brilliance of their colouring.

"Call us not weeds—we are flowers of the sea,
For lovely and bright, and gay tinted are we;
Our blush is as deep as the rose of thy bowers,
Then call us not weeds—we are ocean's gay flowers."

One of the most remarkable is the Sea-dock, which, when in a state of perfection, is of a rich blood colour; this plant is so thin, and so strongly adhesive, that if laid on paper, the sheet may be folded in any form without occasioning either wrinkle or separation. The colour retains its brilliancy for many years, and, when it has somewhat faded it becomes variegated with red and yellow, bearing some resemblance to a striped tulip. Of the same genus there is one species which has been denominated the Sensitive Fucus, from its possessing the curious property of shrinking from the touch, and indeed from everything warm: if brought near the fire, its edges begin to move and draw towards each other; but if, while in this state, the finger be brought near them, the edges again retire and resume their primitive position. Placed on a warm hand, all its parts appear convulsed, and it seems to writhe like an animal in pain. All the smaller kinds of Algæ, as these plants are termed, are the finest possible objects for the microscope, and show numerous wonderful contrivances, and singular diversity of structure. Of the larger-growing kinds, the most common is the Great Strapwort (*Laminaria*), which has dark green leathery fronds, from three to four feet long. Bladder-weed (*Fucus vesiculosus*) has long, dark green, tough fronds, covered over with large round blisters, which are full of slimy juice when fresh, and when dry, crack if trodden upon. Then there is the *Ploclamium coccineum*, a delicately red feathery sea-weed frequently collected by visitors to the coast. There is another noticeable kind, *Ulva latissima*, having a thin, wide-spreading, bright green frond, crimped, crumpled, and curled into all fantastic shapes. Many more than these may be gathered on any part of our coast in an hour's walk, especially near the mouth of the Thames, where a number of rare kinds are carried by the currents of the German Ocean. Sponges also are frequent on our western shores, generally found adhering to the solid rock, to moveable stones, or to large shells. Some of these sponges have projecting parts, resembling leaves curled up; others appear as solid oblong balls, and others again are full of large circular holes at the extremities of their tubercles, exhibiting, when taken out of the water, a colour approaching to purple, which speedily fades on exposure to the air. These and many other objects equally curious and instructive may be met with by the attentive observer of nature, who finds

> "sermons in stones,
> And good in everything."

I have in my possession a considerable number of dried specimens of sea-weeds, which are really pretty objects, collected by myself during a few rambles on the south and western coasts of this island; when I look them over, or exhibit them to admiring friends, I may say with Bernard Barton—

> "I will not repine while remembrance can be
> Still blest with the moments I've spent by the sea."

ose who may be inclined, and are favoured with opportunities to lect and dry the marine Algæ, may derive a little assistance from a detail of my plan of proceeding, which is as follows:—When gathered, they may be either dried in the sun or put in a bag until a convenient time for spreading them out; when this is to be done, place them in fresh water, and gently wash them, to remove sand and dirt, as well as to dissolve any incrusting salt. Place such as are delicate in a plate of water, and there spread them out, one at a time; slip a piece of clean paper under each, if lifted up with care, the specimen will settle evenly upon it; place it in a book, and it will soon dry. Some will adhere to the paper of themselves; others may be fixed, when dry, with a weak solution of gum Arabic. I cannot conclude this paper without recommending two delightful little works on this and kindred subjects, which all lovers of marine productions should read—Landsborough's "British Sea-weeds," and Gosse's "Naturalist's Ramble on the Devonshire Coast.,'

DESIGN FOR A SMALL ESTATE, COMPRISING ABOUT TEN ACRES.

BY T. RUTGER, ESQ.

(Fig. 1.)

The design here given comprises an area of about ten acres. The approach has a lodge entrance, with a sweep to the house and round to the stables. The east wing of the house is meant for the in-door offices, screened with shrubs on the north and south. Proceeding to the left from the south front, the kitchen garden may be entered, or the main walk may be kept, leading round the outskirts of the premises. At the south of the kitchen garden the water may be crossed, by entering a mass of rockwork, or a covered grotto, with a flat bridge over the stream; by keeping the original walk, a moss-house on the left appears on the lawn, which may be screened with a shrubbery, having a walk to lead to it; proceeding onward there is an ornamental bridge, from whence the walk leads to a summer-house, and from thence to another bridge, thrown over where the stream is supposed to enter the premises, or, by diverging to the right, a walk leads to the water, where there is a boat-house, and from which point another walk strikes off to the right, and joins the walk which leaves the grotto. Proceeding from the bridge where the stream enters, a walk leads into an aviary, in which are meant to be covered erections with trellis-work or wire fronts, with a small basin in the centre. The flower garden may be entered from the aviary, in which there is a plant-house, and a pond in the centre, with a fountain; at the north of the plant-house is a space to receive the greenhouse plants in summer. At the east end of the house a glazed corridor leads to a circular conservatory, supposed to have a dome over it, with stained glass, from which a walk leads to the flower garden, and also walks leading round the north and south fronts of the house. The ice-house is placed at the end of the orchard, on the south of the kitchen garden. There is a temple at the east end of the water, and on the lawn behind are two circles for statues. The small circles about the conservatory and in front of the flower garden are intended either for orange trees in summer, or for vases or other embellishments. At the front of the flower garden a wire fence may be erected for creepers. Vases and ornamental structures may be placed in different parts of the premises as taste may direct. The remainder will be understood by the reference.

Reference.—1. Stable-yard, with stable, coach-house, and harness-room. 2. Piggeries. 3. Dung-yard, with sheds for the use of the garden. 4. Poultry-court, with sheds for fatting, etc. 5. Frame-ground, with sheds, and for under gardener's room, etc. 6. Laundry-yard, with laundry and brewhouse. 7. Forcing department. 8. Gardener's house. 9. Kitchen garden. 10. Orchard and fruit garden. 11. Slips—the western one intended for a row of filberts, berberries, etc. 12. Back entrance to gardener's house and frame, ground. 13. Walk leading to back entrance for the domestics.

DESIGN FOR A GEOMETRICAL FLOWER GARDEN.

BY J. MAJOR AND SONS, LANDSCAPE GARDENERS, KNOSTHORPE, NEAR LEEDS.

(Fig. 2.)

The accompanying design is for an ideal parterre upon a lawn, arranged in the geometrical style, and which, owing to their stiff and formal character, should never be placed (except in very limited grounds) so as to interfere with the repose of what ought to form a free, flowing, and natural composition. *a*, an umbrella seat; *bb*, covered seats. The small squares on the grass are sites for vases, urns, sculpture, etc. The round beds are to be occupied with masses of bedding-out plants. The small dots along the walk-sides indicate the situations for standard roses.

GRAND FLORAL EXHIBITION, CRYSTAL PALACE.

The last grand exhibition at the Crystal Palace, for the present year, took place September 10th, 11th, and 12th, and was one of the most successful which has been held under the auspices of this enterprising Company; the number of visitors exceeded fifty-two thousand, and prizes for plants and flowers were awarded to the value of £338 15*s*. The display of Dahlias was fine, measuring a length of more than sixty yards, in three rows, Mr. Turner taking the lead in the first Fifty Blooms. Among the best flowers were the following: — Chance, Lord Bath, Eclipse, Grand Sultan, King of Autumn (rather low in the centre), Perfection, Duchess of Wellington, Captain

Ingram, Lord Palmerston, Shaded Model, and Lady Popham. Mr. Turner was followed by Mr. Keynes, in whose stand we remarked Amazon, Andrew Dodd, Ruby Queen, Chrysalis, and Annie. Mr. Henry Legge had the third prize in this class, the best in his stand being Annie Salter and Fanny Keynes. Mr. Charles Kimberley, Messrs. Drummond, and Fraser were other exhibitors in the Fifty Bloom class, to the two latter of whom were given extra prizes. In Twenty-four Blooms, the Rev. Charles Fellowes, Shottesham, stood first; Queen Victoria, Mrs. Wheeler, Lord Bath, Lilac Model, and Lord Palmerston were his best flowers. Mr. George Holmes, Brook Lodge, Norwich, second prize; the best blooms—Fanny Keynes, Grand Sultan, Perfection, Cherub, and Lord Palmerston. Twelve Blooms, Fancy, Mr. Henry Legge obtained the first prize; the best flowers being Miss Bathurst, Gloria Mundi, Baron Alderson, and Princess Charlotte. Mr. Turner was second in this class, showing Butterfly, Mrs. Hansard, Comet, Pigeon, Miss Frampton, Elizabeth, Topsy, Magician, Mr. Willis, Mutabilis, Miss Herbert, and Princess Charlotte. Several seedlings were shown, some of which received prizes; we notice Lady Franklin (Rawlings), salmon-red, shaded, tolerable outline and good centre, but rather small. Albion (E. C. Allen), French white, with a cream centre, well up, tolerable outline, a medium-sized flower. Fenella (Holmes), white, laced with purple, a good depth of petal. Delta (Turner), yellow, very full centre, well up, tolerable outline, but rather flimsy petal. Roland (Bushell), white, deeply laced with carmine-purple, centre rather too low. Satirist (Turner), salmon-red, shaded with ruby, a full centre, but a small flower. Duchess of Beaufort (Bushell), white, tipped with purple, fine outline, well up, good. Marion (Fellowes), creamy blush, lightly laced with purple, fine outline, good petal and centre, with great depth. Touchstone (Fellowes), ruby red, tolerably good centre. Saturn (Turner), clear yellow, slightly laced with buff-red, good centre and outline, a fine flower. Lady Popham (Turner), creamy white, well up, good outline, and a fine depth of petal. Cherub (Holmes), deep orange, good petal, centre, and outline. Two seedlings of 1855: Mrs. Legge, clear yellow, lightly laced with buff-red, good centre, but rather quilled. Fancy King, buff and red, tipped with white, a second-rate flower.

There was a fine collection of German Asters, cut blooms, in stands of twenty-four, and nothing could be finer than some of them, being perfect hemispheres three and four inches across; a length of twenty yards was occupied by these flowers. The first prize was given to Mr. Betteridge, Milton Hill, near Abingdon.

Hollyhocks were very fine: two collections in spikes—the best by Mr. Chater, the second Messrs. Paul. The first exhibited Mr. Joshua Clark, deep crimson-scarlet, extra fine. Sir W. Middleton, salmon-buff, large. Purple Perfection, fine deep purple, large. Ignea, salmon-scarlet, very double and full. Jabez Chater, salmon-red, very full, and extra large. Sulphur Queen Improved, creamy yellow, large and full, Lilacina, lilac-purple, fine. Alexandrina, delicate French white. Golconda, rosy orange, full. Lizzy Roberts, one of the purest whites we have seen. Lady Middleton, rosy red, large and full. Messrs. Paul had Primrose Perfection, delicate and fine. Lizzy Improved, delicate flesh, fine and very double. Queen of the Whites, a good flower. Louis Napoleon, veined lilac, maroon base, very full. Rosy Morn, bright pink, very double. For Cut Blooms Messrs. Paul came first; their best were Lizzy Improved, Lord Jocelyn, Avalanche, Mrs. Ashley, Glory of Cheshunt, Village Maid, and Miss Ashley. Mr. W. Chater, second prize; the best being Phœbe, William Chater, and Mrs. Ashley. Mr. Turner obtained the third prize, showing Black Prince (fine), Comet, Souvenir, and Lizzy. Mr. Bragg was fourth. Mr. Chater had some seedlings, not sent for competition; a few of which were distinct, and very promising. Mr. Shenton, of Hardon Park, exhibited two seedlings, named Louisa Grant and Ellen Shenton.

Roses—of these there was a good show of cut flowers, Mr. Mitchell, of Piltdown, near Maresfield, having the best. We noticed in his stand Paul Dupuy (H. P.), very double; Le Lion des Combats (H. P.), semi-double, rich and very fine. Messrs. Paul were second; their best being Lamarque (N.), delicate sulphur, and Mrs. Bosanquet (H. C.) Mr. John Cranston, King's Acre, Hereford, exhibited a fine collection, comprising about forty blooms of Gloire de Dijon (one of the best Roses grown), and the following: Souvenir de la Malmaison, Cloth of Gold (N.), La Reine (H. P.), and Niphetos (T.), a loose flower, but delicate. Mr. Francis, of Hertford, obtained the third prize; in his stand were Emperor Napoleon, (H. P.), one of the richest flowers grown, scarlet-crimson; Lane (H. P.), clear, pale violet-crimson; also twenty or thirty blooms each of Géant des Batailles (H. P.), Gloire de Dijon (T.), and La Reine (H. P.) For collections of Twenty-five Blooms, Mr. Brush, Norwood, was first, Mr. Evans, Nuneaton, second, and Mr. Wortley, Norwood, fourth.

Of seedling florist's flowers, we must not omit to mention a Fuchsia exhibited by Mr. Mitchell, named *Grandiflora plena;* the tube and sepals crimson, corolla rich violet-plum colour, large, and very double; a very good variety. Petunia, Mrs. Cutbush, flowers white, foliage much variegated, having a rather sickly appearance. Geranium, Burning Bush, variegated foliage like Flower of the Day, with a pretty pink ring in the leaf, which is altogether stiffer and more flat; the flower itself a pretty good scarlet.

There were several collections of Verbenas, the best being shown by Mr. Shrimpton, gardener to A. J. Doxat, Esq., Putney Heath, and were in pots, trained over flat circular wire trellises; we would call attention to Lord Raglan, a fine brilliant scarlet, with white eye, and to Wonderful, a purple variety of considerable merit. Messrs. Weatherill and Bragg got second and third prizes.

Fuchsias occupied a stage about twenty-five yards long, and comprised some well-grown plants. Mr. Mitchell took the first prize. Of light kinds we remarked Venus de Medici, Pearl of England, Duchess of Lancaster (pure white, with rose-coloured corolla), England's Glory (a good flower), Clio, and Snowball. Among dark kinds were Autocrat, Prince Albert, Orion, Duke of Wellington, Banks's Glory, Alpha, and General Williams.

The display of Scarlet Geraniums was about fifteen yards long, and three stages deep. Mr. Weatherill was awarded the first prize. The best of this class were Le Titian (a very fine compact flower), Rubens, Lady Middleton, Tom Thumb, and Trentham Rose. Among sorts with horseshoe leaves were Baron Hugel, Masterpiece, and Brighton Hero; and of variegated sorts, beautiful plants of Brilliant, Attraction, Silver King, Golden Chain, and Flower of the Day. There were also variegated and other kinds grafted standard high. These were grafted by cutting off the head of the stock, and splitting it open to the length of about two inches, in which the graft cleanly cut was inserted.

There was a fair display of Achimenes, in which class Mr. Mitchell took the lead, followed by Mr. Gaines and Mr. Gedney. We noticed Gigantea, a variety in the way of Picta, Chelsoni, Rosea, the blue and white varieties of Longiflora, the white Margueritæ, Venusta, Backmanni (a good purple), and Edmond Bossier, white, prettily streaked round the eye with lilac.

A fine collection of Ferns was exhibited. Of Gymnogramma there were some beautiful species; also *Cheilanthes lendigera*, *Asplenium Belangeri*, *Gleichenia dicarpa* (a beautiful small-leaved kind), *Hemidictyum marginatum*, and *Sagenia alata*. Adiantums, Aspidiums, and others more commonly met with, were also abundant. Messrs. Smythe, Carson, Fletcher, Morris, and others obtained prizes in this class, as also in Lycopods, of which there were a few good collections, in which we may mention the following as most interesting and beautiful:—*L. Danielsianum inequalifolium*, *Mertensi*, *lepidophyllum*, *Cæsium arboreum*, *Galleotti*, *stoloniferum*, *denticulatum*, *flexuosum*, *umbrosum*, *viticulosum*, *Wildenovi*, and *apodum*. The compact green tufts of the last were the admiration of all.

Messrs. Veitch showed a beautiful collection of Pitcher Plants, as did also Mr. Gedney; the kinds were *Nepenthes Rafflesiana*, *ampullacea*, *lævis*, and *phyllamphora*.

Heaths were sent by Messrs. Brush, Peed, and Williams; the best were *Erica Cloweisiana*, *Massoni*, *Irbyana*, and *retorta major*.

Orchids were not in such numbers as usual. Mr. Carson obtained the first prize, followed by Messrs. Wooley and Gedney. Among the handsomest and best specimens were *Miltonia candida*, *Odontoglossum grande*, *Vanda tricolor*, *Peresteria alata*, *Vanda cærulea*, *Eria leucostachya*, *Angræcum caudatum*, *Epidendrum vitellinum*, and *Oncidium lanceanum*.

Of Stove and Greenhouse Plants, the first prize was awarded to Mr. Taylor, gardener to J. Coster, Esq., Streatham; the second to Mr. Peed; and Mr. Hamp, third. These collections generally comprised fine well-grown specimens, including *Allamanda cathartica* and *Schotti*, *Dipladenia splendens*, *crassinoda*, and *Javanica*, *Ixora coccinea*, *Æschynanthus splendens*, *Tetratheca verticillata*, *Pleroma elegans*, *Vinca rosea* and *oculata*, *Clerodendron fallax*, *Cyrtoceras reflexum*, *Erica Eweriana* and *ampullacea*, *Rondoletia speciosa*. A fine display of Japan Lilies of sorts, *Lilium Wallichianum*, and other fine plants.

There was probably a better collection of Variegated plants and such as possessed fine foliage than was ever before seen. The best of the latter came from Messrs. Veitch, who obtained the first prize. It consisted of splendid plants, beautifully arranged, of *Livistonia borbonica*, *Philodendron pertusum* (a species with large and handsome leaves), *Dracæna Draco* and *indivisa*, the beautiful *Aralia pulchra*, *Plectocomia elongata*, *Pandanus utilis*, *Dion edule*, *Cycas revoluta*, and *Sabal umbraculifera*. Messrs. Veitch also sent a very fine group of Variegated plants, and collections of the latter were also shown by Messrs. Lee, Jackson, and others. Among the different kinds were *Musa zebrina*, *Maranta Warczewiczi*, *Dieffenbachia picta*, the beautiful *Cissus discolor*, *Croton pictum*, *variegatum*, and *discolor* (the latter with leaves red underneath and green above), *Pandanus argenteus variegatus*, *Coleus Blumei* and *pectinatus* (the latter streaked and mottled with brown), the red and brown *Dracæna terminalis* and *ferrea*, *Ananassa sativata variegata*, a variegated variety of the Aloe-leaved Yucca, a Hydrangea with green and white leaves, the variegated *Aspidistra lurida*, *Caladium pictum bicolor*, and *Begonia splendida*.

The Palace and grounds were, as usual, in excellent order; the beds well furnished with flowers, and the marble vases in the grounds and on the terraces were a perfect blaze of beauty with masses of scarlet Geraniums. In-doors the Water Lilies were full of bloom, and all the plants in perfect health. Two gigantic Tree-ferns, four yards across, were very attractive objects. The plants in pots and baskets, as well as the climbers against the pillars, were covered with bloom, and if kept up in such style each season, there can be no doubt the Palace will continue a permanent centre of attraction to all classes.

Out of doors we remarked some of the beds as especially attractive; one round a Deodar Cedar, in which German Asters of various colours, and very double, were pegged down, looked well. The beds and borders round the Rose garden were in profuse bloom, being well filled; they are situate round a conical mound, and the plants are arranged thus: nearest the walk a narrow border of *Mimulus moschatus* (the common Musk), then Geranium Tom Thumb in a broad belt, yellow shrubby Calceolarias, blue Larkspur, and Mignonette; thus arranged the effect is charming.

The beds on each side the central walk were well in bloom, some we particularly noticed as very pretty, filled with Flower of the Day, Geranium, and *Alyssum variegatum*; the white of the latter and the pink of the former, together with the yellow foliage, had a very pretty effect. The gardens on the upper terraces, in the Italian orchain style, were filled with Tom Thumb Geraniums, towards the outside and the centre with yellow shrubby Calceolarias, the two colours making a gay scene. Some of the beds on the upper terraces were edged with *Alyssum variegatum*, and others with Mangles's Variegated Geranium. There was also a bed containing the Crystal Palace seedling Dahlia; a variety of not more than eighteen inches high, free bloomer, deep purple-crimson, round which was a belt of white Petunia, producing a pretty contrast.

The fruit and vegetables were very numerous and fine, but not being within the province of the *Floricultural Cabinet*, we cannot devote space to particularise them.

REVIEW.

Ferny Combes. A Ramble after Ferns in the Glens and Valleys of Devonshire. By CHARLOTTE CHANTER. 12mo, 3*s.* 6*d.* London, Lovell Reeve, 1856.

A VERY pretty little work, popularly written, containing descriptions of eighty-eight species and varieties of Ferns which are to be met with in Devonshire, and eight neatly executed plates of Devonshire scenery and Ferns. We annex the first chapter as a specimen of the work.

"On my very first page I must disclaim any intention of attempting to supersede those scientific and necessary works already published on the study of Ferns. My object is merely to give a short account of those that may be found in Devon, in such a manner as may render them readily recognised by the novice in botany, and to describe some few of the beauties of the beautiful districts of the West.

"Mr. Gosse, in his 'Naturalist's Rambles on the Devonshire Coast,' has called attention to many of its charms and wonders, both scenic and marine. He has done a good deed, as every one does who presents new objects of interest and research to those who, living habitually in romantic scenes, forget to notice them, and surrounded by many of the most marvellous of God's creations, know neither their habits nor their nature. Some indeed may inquire 'what is the advantage of knowing the names of a set of weeds which are of no use to any one?'

"'Of no use?' That is a question not for us to solve. At any rate, are many of your employments more useful? Are all so innocent?

"Ask the worn-out, heart-wearied man yonder, who has escaped for one short month from his stool in a city office—ask him if there be not a use in the exquisite and various forms and colours of the seaweeds he is turning over on the beach. He will answer 'it does me good to look at them; it refreshes my soul; it makes me young again!'

"Of no use? That is too easily assumed, and implies surely a forgetfulness of Him that made them. It does not necessarily follow that a thing is useless because we happen to be ignorant of its use. We ought to believe, we ought to be sure, that the lowliest flower or insect has, though it may be unknown to us, a real use in God's economy. 'Behold the lilies of the field how they grow!' These gaily-dressed flowers had their use. It was their mission (could they have a higher?) to become preachers unto men, of reliance on God for meat, drink, and clothing.

"Who will deny the fascination which flowers of the choicer kinds exercise over all. But to how few are they accessible! The costly greenhouse, the highly paid gardener, are requisite for their possession; but what do the wild flowers cost? Only the trouble of picking them; and they, if people take the pains of looking for and examining them, have quite as many, though more humble, charms than their more aristocratic relations.

"'Here! smell this bunch of butterfly orchis. Did ever a greenhouse produce a flower with more exquisite scent?'

"'But where did you find it? I never saw it before.'

"'Good friend, I plucked it by the side of a road you have passed a hundred times. Look at these daffodils! where will you find colour more brilliant, texture more delicate?'

"'But they are such vulgar flowers; they are so common!'

"'My friend, I fear you are very vulgar, for men and women are very common on the earth.'

"Among the many pursuits that people follow now-a-days for instruction, as well as mere amusement, few have arisen in so short a space of time, or deserve more attention, than the study of that mysterious class of plants known as Ferns, which are, as most people are aware, a flowerless tribe, bearing, with one or two exceptions, their fructification at the back of their leaves, in brown masses, sometimes round, sometimes oblong.

"Here I would give a hint to young botanists, never to name a Fern unless it is seeded, as many leaves of flowering plants greatly resemble some Ferns in their outline and cutting. I have known more than one instance of persons fancying themselves possessed of a rare Fern, when, in fact, they had but the leaf of the common weed.

"Unlike general botany, which gives comparatively little pleasure after the flower is named, from the difficulty of preserving the colour of the specimens, the study of Ferns not only leads the collector into the most picturesque scenery, and wildest haunts of nature, but by the winter fireside, or in the close rooms of our crowded cities, he has but to open his 'Fern book,' and the forms of his favourites appear before him as green and graceful as when they hung by the mountain torrent, or waved in some quiet shady lane, bringing back to remembrance pleasant summer rambles amid lovely scenes, making the heart swell with gladness at the recollection of the forms of beauty and purity on which he has been permitted to gaze.

"Some Ferns are only to be found in certain situations. *Allosorus crispus*, the Parsley Fern, so called from its resemblance to parsley, is found only on lofty hills, and people are apt to confine their search for it to the north of England and Wales, because those are the habitats generally given. Botanists, however, have not yet looked everywhere; there are still many untrodden corners, and we feel certain many an unthought-of treasure yet to be discovered. This Fern was found a few years ago on Exmoor, not far from Challacombe. We have hunted for it three or four times, but without success. In our search for the Parsley Fern we stumbled on *Polypodium Phegopteris*, the Beech Fern, for which that locality was never before given. Now *P. Phegopteris* has often in its company the delicate Oak Fern, *P. Dryopteris*, so we searched further, and, to our great delight, found abundance of *Phegopteris*, and the pretty *Dryopteris* (which until that day was supposed to be absent from Devon and the adjoining counties) intermixed with it.

"In the same glen we lighted on a few fine plants of *Polystichum lobatum*, and two of the Lycopodiums (provincially known by the name of "Good Luck"), *L. clavatum* and *L. Selago*. Moreover, we had the pleasure of seeing two ring-ousels, or mountain blackbirds, in their native haunts, and their strange call as they whirled around us, or, seated on a stone, watched our movements, added to the wildness of the scene. *Lastrea rigida* is believed to grow only on limestone; *Asplenium viride* to be confined to lofty positions; *Woodsia* to the highest mountains and most inaccessible cliffs; *Lastrea Thelypteris* is the inhabitant of marshes; *Lastrea cristata* of bogs; yet remember there is many a bog, many a marsh, many a cliff, that has never been really well searched, and you may chance to stumble on a variety where least expected. To tell the exact spots where each plant grows would be depriving you of one of the greatest pleasures and interests of the pursuit—namely, discovery for yourself. If you take a tour through Devonshire, and use your eyes as you travel, you will hardly fail to find most of the Ferns I shall describe to you; but it is no exercise of observation to walk straight to a given point, pluck a leaf, and walk back again. No; a Fern-collector, if he really wish to make discoveries, must be ever on the alert, ever watching; even on a wall you have passed a hundred times without observing anything curious, the hundred and first time you may find a treasure you did not think was within fifty miles of you."

NOTES ON NEW AND SELECT PLANTS.

150. Rhododendron Brookeanum. Nat. Ord. *Ericeæ.*—A splendid plant, named in honour of Sir James Brooke, the Rajah of Sarawak, being a native of that territory, in the large island of

Borneo, from whence it has been introduced, through the instrumentality of Mr. Lobb, to Messrs. Veitch's nursery at Chelsea. It attracted great notice at the horticultural exhibitions in 1855, and has since been flowered at Messrs. Veitch's during the present year. It is an epiphyte; the flowers are large, being near two inches and a half across, rather loosely arranged, and of an intense orange-yellow; the leaves are of considerable size (sometimes nine inches long), the roots large and fleshy, not, as is usual, fibrous. It grows on very high trees in its native forests, and is rather rare. (*Bot. Mag.*, 4935.)

151. **Rhododendron**, *var.* **John Waterer.**—Colour bright crimson, with dark spots; truss very large, and foliage fine. This and the two following are varieties raised by Mr. John Waterer, of the Bagshot Nursery, and we understand have proved perfectly hardy, blooming towards the close of June.

152. **Rhododendron**, *var.* **Mrs. John Waterer.**—Flowers bright rosy crimson, with dark spots; a fine conical truss, and of excellent habit.

153. **Rhododendron**, *var.* **Lady Eleanor Cathcart.**—The blossoms of this variety are a vermilion-scarlet, with a distinct blotch of chocolate-coloured spots; growth very vigorous.

154. **Rhododendron**, *var.* **Alarm.**—Perhaps one of the most striking of the hardy hybrids, each petal being edged with clear scarlet, the centre of the flower quite white. It is a late bloomer, and, with the annexed seven varieties, is now being sent out by Messrs. Waterer and Godfrey.

155. **Rhododendron**, *var.* **Black-eyed Susan.**—Purplish lilac, the spotting being more decidedly black than in any variety we know.

156. **Rhododendron**, *var.* **Beauty of Surrey.**—Rich, rosy scarlet, good shape, and prettily marked.

157. **Rhododendron**, *var.* **Lord John Russell.**—Pale rose, the upper petal being distinctly and beautifully spotted, or rather blotched; this is decidedly the best in its way.

158. **Rhododendron**, *var.* **Magnum Bonum.**—Rosy lilac, spotted all over each petal; the flowers being large, and almost flat, makes it very attractive.

159. **Rhododendron**, *var.* **Prince Albert.**—Rich lake, the flowers of remarkable consistency, in fact almost approaching a Camellia; certainly one of the most distinct and desirable kinds.

160. **Rhododendron**, *var.* **Perieanum.**—Light rose, finely spotted; this is a very pleasing kind.

161. **Rhododendron**, *var.* **William Downing.**—Rich dark puce, with an intense black blotch on the upper petal, of paint-like consistency; the flowers are individually large, and the truss magnificent.

162. **Dendrobium Amboinense.** Nat. Ord. *Orchideæ.*—Introduced by Messrs. Rollison, of the Tooting Nursery, from Amboyna,

where it was originally discovered by Mr. Henshall. It flowered with the above-named gentleman in June, the present year, and proves to be a singular species. The flowers are borne in pairs, the sepals and petals creamy white, long and narrow, very closely resembling each other; the labellum is small, clear yellow. (*Bot. Mag.*, 4937.)

163. METHONICA VIRESCENS (Syn. *Gloriosa virescens*). Nat. Ord. *Uvularieæ.*—An inhabitant of several districts, widely separated, in Africa, having been found in Congo, Senegal, Natal, and also Madagascar. This plant differs but slightly from an allied species, well known to gardeners as *Gloriosa superba*, to which the flowers of the present species have much resemblance in colour and form, although rather larger, and more showy. The leaves, however, are smaller. (*Bot. Mag.*, 4938.)

164. SALVIA PORPHYRATA. Nat. Ord. *Labiatæ.*—A very pretty Salvia, which, although not quite hardy, will prove a useful bedding plant. The flowers are produced copiously, in whorls of from four to six flowers in each, on a spike of about nine inches in length, of a brilliant scarlet. The plant is of a dwarf habit, and neat in appearance, the leaves closely resembling those of the common Ground Ivy (*Glechoma hederacea*). Its native country is unknown. It is a species which, when more extensively known, will be much prized as a bedding plant. (*Bot. Mag.*, 4939.)

165. BIOTA MELDENSIS.—A new hybrid Arbor Vitæ, raised in France by M. Quetier, and said to be between the common Arbor Vitæ and a Red Cedar. It appears to possess a fine pyramidal habit. (*Gard. Chron.*, 182.)

166. AMARANTHUS ALBUS. Nat. Ord. *Amaranthaceæ.*—A variety with white stems, brought into notice by Captain Hall, of Berwick-upon-Tweed, who has forwarded seeds to the Horticultural Society. The plant grows to the height of about two feet, flowers pale green, leaves ovate, stems much branched, glabrous, and very white. It is used as a vegetable, and will, from the high testimonials we have seen, no doubt become an esteemed addition to the table, the leaves having the flavour of spinach, and the stems, being tender and succulent, are said to resemble asparagus.

QUESTIONS, ANSWERS, AND REMARKS.

AUSTRALIAN GRASS TREE AND GERANIUMS.—I have been interested in a narrative given by a missionary labouring in Australia. He says that on one occasion, journeying towards the diggings at Steylitz, he met with a plant or vegetable named the *Grass-tree*, which, according to his description, I do not remember being noticed in any of our catalogues. The following is an abstract, *verbatim*:—"Presently we ascended a mountain range, large patches of which were covered with fragments of quartz, indications of the golden ore which lay hidden beneath the surface to reward the digger's toil. The top of this range was covered with the remarkable Grass-tree, of which I do not remember previously to have seen any specimen; the trunk varies from one to four feet in height, and is crowned with a thick tuft of long fine grass, which droops gracefully towards the ground; the whole is surmounted by a thick stem, like a huge bulrush, eight and sometimes ten feet in height. Here we found a great variety of wild flowers, and among them several kinds of Geraniums." If any contributor to the *Cabinet* can give further information about the above apparently interesting species of plants, it will perhaps add somewhat to the knowledge of those who are interested in the pursuit of novelties connected with the science of horticulture, especially if at the same time the name of the plant and the genus to which it belongs is given. The narrator of the above also adds, that among the variety of wild flowers there growing he found several kinds of Geraniums. *Quære*—have there ever been any of the Geranium tribe imported from Australia? Information on this subject may also be of value.—*T. R.* [We have no doubt the statement respecting Geraniums is founded in error.—Ed.]

Blooming Plants in Winter.—Please to inform me whether a north-north-west aspect, by means of constant good heating, would keep plants well and in good bloom through the winter.—*H. L.* [Plants require abundance of light; if the situation be not too shady, you may succeed.—Ed.]

Worms on Grass.—A Subscriber wishes to know the best method for destroying worms on a lawn. [Roll the grass twice, and then water it with lime-water, at the rate of one pint of lime to ten gallons of water. This operation twice performed will destroy every worm without injuring the grass. Or, mix a quarter of an ounce of corrosive sublimate with three gallons of water, which is quite as efficacious.—Ed.]

Chlidanthus fragrans a Hardy Bulb.—This elegant and fragrant flower is of as easy culture as the Narcissus. I first tried it in the stove, and afterwards the frame, but high temperature has the effect of fretting the bulb into offsets, and not of enlarging it. Afterwards I planted it under a south wall, in a bed eighteen inches deep, in the soil in which I grow a collection of Amaryllis (turfy loam, sand, and decayed vegetable matter), planting the bulbs six inches deep, and protecting them during winter by mulching. In April following they began to show themselves; I was satisfied they were getting stronger, as very few offsets appeared, and the leaves were more sturdy. I again lifted them undisturbed, but not a bulb threw up a scape, and after they had made most vigorous foliage, and gradually died off, I took up the plants in November, when some very fine bulbs were obtained, nearly as large as *Sprekelia formosissima*, or four times larger than the original bulb. I potted seven bulbs, four of which flowered in the greenhouse in April. The remainder of the bulbs I planted out as before, and one of them in the end of May threw up its scape, and flowered.

Lilium giganteum.—A magnificent specimen of this plant has lately bloomed in the garden of the Hon. and Rev. J. T. Boscawen, Lamorran Rectory, near Truro. It appears to be the finest specimen that has yet flowered in Europe, and is one of four offsets taken in November 1854, from a plant which bloomed out of doors in July of that year. The bulb was unprotected in winter, although the thermometer was sometimes down as low as 10° in Cornwall. It has also borne the springs of 1855 and 1856, and, the present flowering season, has attained a height of twelve feet, having a spike of eighteen flowers, each measuring six inches across at the mouth, yielding a beautiful perfume. There can be but little doubt, with these facts before us, of the hardiness of this Prince of Lilies, and we hope others may be induced to try the experiment in other localities.

Lilium giganteum in North Staffordshire.—This extraordinary plant flowered splendidly in July last at Biddulph Grange. It was planted in the open border, and has borne the last three severe winters without any other protection than a wooden shutter, intended to throw off superfluous moisture; and even this precaution was probably superfluous. The flowering stem made its appearance in April, and rose to the height of eight or nine feet, crowned by a truss of fifteen blossoms, which continued fully ten days in perfection. They were exquisitely fragrant, and first expanded in the evening, a circumstance that might have escaped notice had not the delicious odour—perceptible at the distance of thirty yards—attracted attention to the spot where the plant grew. The flower-stem measured three inches in circumference at the height of a yard from the ground, and was as stiff as a flag-staff. It is still (September 10) perfectly green and fresh, but, instead of flowers, is now surmounted by seed-pods as large as those of the common Bean. The plant had been received from Messrs. Veitch, of Chelsea. Fine as was this specimen, it seems to have been inferior to the one that flowered in Mr.

Boscawen's garden, near Truro, in Cornwall; but this was probably owing in a great measure to the circumstance of the Staffordshire plant having been removed last autumn, which of course could not be done without great injury to its roots.—*J. B., in Gard. Chron.*

Plans of Greenhouses, etc.—Allow me to suggest your introducing some plans for greenhouses, etc., of simple architectural exterior, in the Elizabethan or Gothic style, suited to a country house, and adjoining the dwelling. As this would, no doubt, prove to many a novel and useful variety to the information contained in your highly approved work, the *Floricultural Cabinet* (to which I have been for several years a constant subscriber), I shall be glad if the suggestion be adopted.—*H. L.* [We shall shortly fall in with this useful suggestion.—Ed.]

On Grafting the Acacia.—I have often lamented to see the dwarf, delicate, but still beautiful, species of Acacia struggling for life among their more hardy and robust brethren, and especially when the desirable object of placing them in a situation calculated to show their humble beauties to advantage, and impart to them a more hardy and robust constitution, is so easily obtained by grafting. This operation may be performed in almost any situation. Perhaps the best stock would be *Acacia affinis*, owing to its rapid growth, and to its being hardier than any of the rest. By choosing a strong stock, and planting it out of doors in the early part of May, and then, as soon as it had taken root, grafting it, cutting it down to within a few eyes of each graft, or, if it can be conveniently done, inarching it, a fine tree would be formed in a very short time. The scions may be put on of almost any size, even a large plant. Smaller plants may be grafted or inarched either in the stove or greenhouse. The plants that are grafted out of doors I would recommend to be potted in the autumn, in order to give them a little protection in winter, again planting them out in spring; and by continuing this system for two or three years, the grafts will become fairly established, when they may be left out all winter, with a good covering of mats in frosty weather. I trust the above hints may be thought worthy the attention of the numerous cultivators of this beautiful genus.—*S. F.*

Victoria Regia.—My *Victoria Regia* is still producing very fine leaves and flowers. I planted it out on the 30th of April in the usual manner, in a tank twenty-two feet square, heated by hot water; I keep the temperature of the water from 85° to 90°. The soil I planted the Victoria in is good turfy loam mixed with rough sand. After it was planted about ten days, it made leaves four feet in diameter, and in a week or so it flourished until its leaves measured six feet nine inches across. The largest flower it has produced measures eleven inches and a half in diameter; it is now flowering very finely. —*W. May, Rugeley.*

The Savine.—*Juniperus Sabina* is a splendid lawn plant, when left to take its natural growth in an open space and kindly soil. A plant on my lawn, twenty-five years old, measures twenty-two yards in circumference. Its branches radiate from a single stem, which is invisible in the centre, feathering all round, without gap or blemish, down to the grass, and rising only about three feet in the middle. It is at all times a pleasing object; but in the spring, when it has put forth its tender shoots, or in the autumn, when bespangled with dew, it is particularly beautiful.—*M. R. Townshend.*

Propagation by Leaves.—Some years ago I first tried to raise bulbs of a Cape Ornithogalum, by setting a cutting of a leaf. The leaf was cut off just below the surface of the earth, in an early stage of its growth, before the flower-stalk had begun to rise, and it was set in the earth near the edge of the pot in which the mother plant was growing, and so left to its fate. The leaf continued quite fresh, and on examination (when the bulb was flowering), a number of young bulbs and radical fibres were found adhering to it. They appeared to have been formed by the return of the sap which had nourished the leaf. Thereupon two or three leaves more were taken off and placed in like situations, but they turned yellow, and died without producing any bulbs. It appeared to me then, and it was confirmed by subsequent experience, that, in order to obtain a satisfactory result, the leaf must be taken off while the plant is advancing in growth. I found it easy thus to multiply some bulbs that did not willingly produce offsets. I afterwards tried, without cutting the leaf off, to make an oblique incision in it under ground, and in some cases not above ground; attempting, in fact, to raise bulbs by layering the leaf. This attempt was also successful; and some young bulbs were formed on the edge of the cut above ground, as well as below. I tried cuttings of the stem of some species of Lilium, and obtained bulbs at the axil of the leaf, as well as from the scales of the bulb; and that practice has been since much resorted to by gardeners, though I believe it originated with me. I raised a great number of bulbs of the little plant which has been successively called Massonia, Scilla, and *Hyacinthus corymbosus*, by setting a pot full of its leaves, and placing a bell-glass over them for a short time. A bulb was obtained with equal facility from a leaf of a rare species of Eucomis; and experiments with the leaves of Lacheualias were generally successful. I apprehend that all liliaceous bulbs may be thus propagated; but the more fleshy the leaf, the more easily the object will be attained.—*W. H.*

ITA PALM.—According to Martius, the fine Palm, Moriche (*Mauritia flexuosa*), Quiteve, or Ita Palm belongs, as well as Calamus, to the group of Lepidocaryeæ or Coryphineæ. Linnæus has described it very imperfectly, as he erroneously considers it to be leafless. The trunk grows as high as twenty feet; but it probably requires from one hundred and twenty to one hundred and fifty years to reach this height. The Mauritia extends high up on the declivity of the Duida, north of the Esmeralda mission, where I have found it in great beauty. It forms, in moist places, fine groups of a fresh shining verdure, which reminds us of that of our Alder groves. The trees preserve the moisture of the ground by their shade, and hence the Indians say that the Mauritia draws the water round its roots by a mysterious attraction. By a somewhat similar theory, they advise that serpents should not be killed, because the destruction of the serpents and the drying-up of the pools or lagunes accompany each other; thus the untutored child of nature confounds cause and effect. Gumilla terms the *Mauritia flexuosa* of the Gauranis the tree of life—arbol de la vida. It grows in the mountains of Ronaima, east of the sources of the Orinoco, as high as four thousand (4263 English) feet.—*Humboldt's Aspects of Nature.*

SHRUBBY CALCEOLARIAS.—During our visits to the metropolitan nurseries, we have noticed some new shrubby Calceolarias possessing considerable merit, and to which it is desirable to draw the attention of our readers; the following are some of the best. Golden Chain, a good yellow. Sulphurea splendens, a fine light yellow flower, of good form and habit, excellent for bedding out. Ethel Newcome; this variety was raised by Messrs. Henderson, of the Wellington Road Nursery; it is a profuse bloomer and of good dwarf habit, deep golden yellow, producing its blossoms in large clusters throughout the entire season. Ajax, a fine large flower, rich brown and crimson, with an admixture of yellow. Norma, one of the largest flowers in this class of Calceolarias, free blooming, of vigorous habit, and very conspicuous, the colour a fine orange-crimson. General Canrobert, a large flower, very distinct and fine, plum colour. Harlequin, a small flower, of close and compact habit, dull orange, densely covered with dark brown spots. Purity, white, large trusses of well-formed flowers, excellent habit. Little Dorrit, a very attractive small-flowered variety, crimson shaded with orange, cap yellow. Beauty of Montreal, a small flower, brilliant crimson, good compact habit, a very effective and excellent bedding variety. Maggiore, flowers large, of a rich ruby crimson, with a conspicuous yellow cap, fine noble habit. Minnie, a beautiful and neat variety for bedding, very profuse in flower, compact, and with bright crimson blossoms. Shirley, fine habit and free flowerer, orange-buff, large. Rosy Morn, large, bright orange and red, shaded. Wildfire, large and very showy, fine free growth, bright dazzling orange and crimson, shaded. We noticed many other seedlings of considerable merit, but the above are the most distinct and best formed, both in habit and flower.

THE HYACINTH.—There is hardly a flower in cultivation so generally a favourite as the Hyacinth, and certainly not one which so gratefully repays the attention bestowed upon it. There is not a medium capable of retaining moisture but it will grow in, and it will give us as good a bloom when planted in wet sand as it will in the richest compost. Many people ought to be thankful for this spring visitor, from those whose delicate hands put the finish to the beautiful stands which grace the drawing-room, to the salamander-like men who, in a heat that would broil a steak, blow the thousands of glasses employed to grow them in water. There is not a smoky hole in the most confined manufacturing town in which the Hyacinth will not bloom, if allowed moisture of some kind in which to lengthen its silvery roots. If we calculated by the means required for its growth, instead of the price of a root, it might truly be called the poor man's flower. There is scarcely an individual who is permitted to live in daylight, but may indulge himself with two or three, if he be fond of flowers, and they will afford gratification till the bloom is over. Let everybody who can raise three flower-pots, or three hyacinth glasses, buy a bulb of each colour, and they will have flowers—aye, if they grow them in a smoky attic or a still more smoky kitchen. The following is a list of some of the best varieties, and can be recommended with confidence. *Double Red.*—*Bouquet Royal, deep blush pink, dark centre; *Grootvorst, light blush, extra fine; Honneur d'Amsterdam, pink, good; Lord Wellington, waxy pink, extra fine truss; *Milton, large red; *Waterloo, extra fine, red. *Double White.*—*La Tour d'Auvergne, extra fine, pure white; La Virginité, very dwarf, fine blush white; Miss Kitty, very large bells, white, violet centre; *Prince of Waterloo, white blush eye, extra fine; Queen of England, pure white, bright pink eye, very pretty; Venus, full double, pure white. *Double Blue.*—*Alamode, light porcelain blue, with purple stripes; Comte de St. Priest, pale porcelain blue, extra; General Antiuk, fine light porcelain blue, with a purple centre, fine; Globe Terrestre, very large bells, pale blue; *Laurens Koster, dark violet, extra fine; Madame Marmont, very double, pale lavender; Pourpre Superbe, dark purple, tipped with green. *Double Yellow.*—*Bouquet d'Orange, orange and pink; Goethe, fine yellow; Heroine, fine citron-yellow; Jaune Suprême, large fine yellow, extra. *Single Red.*—*Aimable Rosette, pretty delicate pink; Diebitsch Sabalskansky, bright deep red, fine; La Baleine, blush, large bells; *Lord Wellington, extra large, rose; Madame Hodson, extra fine, pink, close truss; *Mrs. Beecher Stowe, bright rosy pink, large truss; *Norma, large pink, extra fine. *Single White.*—*Bridal Bouquet, pure white, fine truss; *Grand Vainqueur, pure white, fine; Grand Vedette, snowy white, large bells; Madame Talleyrand, pure white, fine large truss; Richardson, rosy white, large bells. *Single Blue.*—*Baron van Tuyll, purple-blue, large truss; Emicus, dark blue, light centre, fine truss; Grand Vedette, light porcelain, extra fine; *Robinson, porcelain blue, mottled, extra fine; *William the First, dark purple, close truss. *Single Yellow.*—Fleur d'Or, good yellow; *Heroine, pale yellow, tipped with green, fine truss, extra; *King of Holland, fine orange-yellow; Vainqueur, splendid yellow. Those varieties to which an asterisk is prefixed are most adapted for cultivation in water.—*The Gardener.*

Anomotheca cruenta.—This is a bulb well adapted for planting in mass, a fact which is not sufficiently known. I place four or five bulbs in a pot, planting them in equal parts of rich loam and sand, with a little leaf-mould, setting them in a frame until April, when I turn them out into a bed of the same compost, where they flower beautifully from June until the approach of winter. It is well to see to the cutting out of seed-pods as they are formed, which adds vigour to the succeeding bloom. On the appearance of frost, I take them up and store away through winter, in perfectly dry sand. To increase them I prefer making offsets, although seed may be readily saved. It is a very desirable plant for small beds, or for the edging of larger ones. Few flowers are more attractive than the handsome crimson and scarlet ones of this favourite.—*W. Carter.*

Vernal Scillas.—The spring-flowering Squills have many points to recommend them, although they are but seldom seen in cultivation. They are very dwarf, growing but three or four inches high, bearing generally flowers of a brilliant lively blue, and bearing company with Crocuses and such other pretty bulbs. They ought to be grown in every pretty garden, and do well as an edging for a bed. The following kinds are in cultivation:—Scilla amœna, large light blue flowers, April and May. S. bifolia, two varieties, one white and another pink, April. S. Siberica, bright blue, April. S. verna, purplish blue, May. All of them are easily cultivated, and I was extremely pleased with a bed of them which I saw during the past spring in a cottager's garden near Wolverhampton.—*C. Carter.*

Cotoneaster microphylla as a Hedge Plant.—It has been stated that this is admirably adapted for covering rocky banks and walls. As, however, I do not remember ever seeing it recommended as a hedge plant, or used for that purpose except by myself, I may state that few, if any, plants are so well adapted for an ornamental and efficient fence. Ten years ago I planted a hedge of it at the bottom of a sloping garden, about sixty yards long, by the side of a road, and about three feet and a half above its level; and for the last four years it has proved a sufficient protection against cattle, without rails. The only care required is to keep the plants clean, and their branches as they extend in the line of the fence, for a few years, with an annual dressing with the shears or switching-knife, when it has obtained the required size. My hedge is much admired by all who have seen it, being at all times a deep green, and enlivened in the depth of winter and spring with a profusion of scarlet berries, until it again becomes as white as a sheet with its innumerable blossoms, which during the day are literally covered with bees. Besides forming a good and neat fence, the branches hang down above the bank and completely cover it to the level of the road. Mice store the berries up in winter; but the mistletoe thrush is the only bird I have seen attracted by them.—*J. Gaitskell, in Gard. Chron.*

EARLY TULIPS.—The following beautiful varieties of single and double Tulips are highly recommended for their brilliant colours; rendering them a most attractive feature in the decoration of the greenhouse, flower-beds, or window during the earlier spring months, and as they all blossom early they thus afford an opportunity of clearing them out of the beds in time to turn out the usual bedding plants in May and June. *Single Early Tulips.*—Alba Regalis, white; Ardemus, dark red; Bride of Haarlem, red and white striped; Canarie Vogel, fine yellow; Cerise non rectifié, cherry and white; Cramoisie Royale, carmine; Claremond, rose and white flake; Dorothea Blanche, white and carmine; Duc van Tholl, yellow and red, sweet scented, early; Duc van Tholl, varieties—white, scarlet, yellow, rose, and gold striped; Globe de Reynaut, purple and white; Golden Prince, fine deep yellow; Grootmeester van Maltha, white and carmine; Marquise de Wessenrode, deep golden yellow and scarlet flake, fine. Pottebakker, varieties—yellow, red striped, and white; Queen Victoria, white, fine; Rose Tendre, rose and white; Reine de Cerise, white and rose flake; Standard Silver, rose and white flake; Standard Gold, yellow and scarlet; Superintendent, purple and white flake; Thomas Moore, orange-buff; Vermilion Brilliant, splendid crimson and scarlet. *Double Early Tulips.*—Couronne Impériale, cherry and white flake; Duc van Tholl, red and yellow; Duke of York, orange and red; Epaulet d'Argent, rose and white; Gloria Solis, yellow and crimson; Jenny Lind, rosy purple; König's Kroon, crimson-red; La Candeur, white; Mariage de ma Fille, white and carmine striped; Pæony Gold, dark crimson; Pæony Rose, rosy crimson; Rex Rubrorum, crimson; Tournesol, scarlet and yellow; Yellow Roos, yellow.

EFFECT OF COLOURED LIGHT ON PLANTS.—During the early part of the spring of 1840, some experiments I was then pursuing on the chemical influence of solar light led me to the discovery of some extraordinary facts connected with the action of light on vegetation. It is scarcely necessary to explain that every beam of light proceeding from its solar source is a bundle of different-coloured rays, to the absorption or reflection of which we owe all that infinite diversity of colour which is one of the greatest charms of creation. These rays have been long known to possess different functions, and have hence been distinguished according to their supposed properties; the violet and blue being called the chemical rays, the green and yellow the luminous rays, and the red the calorific or heat-giving rays. These distinctions are not in accordance with the strict truth, but they are sufficiently so to suit my present purpose. The light which permeates coloured glasses partakes, to some considerable extent, of the character of the ray which corresponds with the glass in colour; thus, blue glass admits the blue or chemical rays, to the exclusion, or nearly so, of all the others; yellow glass admits only the permeation of the luminous rays, while red glass cuts off all but the heating rays, which pass it freely. This affords us a very easy method of growing plants under the nfluence of any particular light which may be desired. The fact to which I would particularly call attention is, that the yellow and red rays are destructive to germination, whereas, under the influence of violet, indigo, or blue light, the process is quickened in a most extraordinary manner. The experiment is very readily tried by covering a box in which seeds are sown with coloured glasses. The plants will grow most luxuriantly beneath glass of a blue character, but beneath the yellow and red glasses the natural process is entirely checked. Indeed, it will be found that at any period during the early life of a plant, its growth may be checked by exposing it to the action of red or yellow light. Here we have the very extraordinary fact that that portion of the sun's light which produces the greatest impression on the organs of sight, and that also which diffuses warmth through the creation, are destructive to the first processes of vegetation. It is with much satisfaction that I find the results to which I have arrived corroborated by Dr. F. R. Horner, of Hull. In conclusion, I may be allowed to point out, that by studying the effect of these different rays, isolated and in different states of combination, we have the means of imitating the nature of any clime of which a plant may be the habitant. By blending the violet with the yellow light in certain proportions, we may artificially produce the light which shines on "Syria's land of roses;" by uniting with these the red light, we may produce effects on our island soil similar to those seen on the arid wilds over which "the acacia waves her yellow hair;" and by isolating the violet rays we may, to some extent, imitate the climate of the frigid zone.—*Professor Hunt.*

Observations on Forcing Hyacinths.—To make Hyacinths flower early in December, they should be planted the beginning of August, and the pot plunged, in the open air, to such a depth that they may be covered with mould to the extent of four inches. They should be taken out again about the middle or end of October, put in warm tan or sand in a hothouse, near the sashes, and kept moist. If treated in this manner, and kept moist and warm, they will not fail to flower about the beginning or middle of December. Many other sorts may be brought into flower about the beginning of January. Those forced Hyacinths which are intended to flower in February and March should be planted in September and October, or even about the middle of November, the pots being plunged in the open air, and covered with mould. A bed should be made at the beginning of January, consisting of horse-dung, four or five feet deep; it should remain in that state about a week, and then as much mould added as will cover the pots when they are sunk in it. The pots should be now all put in, and the sash raised four or five inches, to admit air both night and day, so that the steam generated by the heat may readily escape. This must not be neglected even during frosty weather, otherwise they will perish. During a severe frost it may be thought that admitting the air is quite unnecessary, but it should not be omitted, only hanging cloths over the opening.—*W. W.*

Bunya-Bunya.—Amongst the Australian productions exhibited at the Exposition Universelle at Paris last year, was one of the finest cones of the Araucaria Bidwillion Bunya-Bunya ever seen in Europe. It was sent by C. F. D. Parkinson, Esq., of Moreton Bay, New South Wales, who has since presented it to the Botanical Museum of the Royal Gardens at Kew. Sir William Hooker, in the *Journal of Botany,* gives the following interesting particulars, for which he was indebted to Mr. Parkinson. "This tree is deserving of more notice than any other growing in the northern districts of New South Wales; not perhaps because the quality of the wood may be superior to the other kinds of Pine, but because each tree belongs to some one individual of the aborigines. The Bunya-Bunya is of the Pine kind, and grows in scrubs, or ranges of hills or mountains. It is not known growing in a wild state further to the south than the range dividing the falls of the waters of the rivers Brisbane and Burnett; but in the Wide Bay District, in the twenty-seventh parallel, it grows very thickly over an extent of country, about thirty miles by twelve, which is in consequence called the 'Bunya-Bunya country.' The tree is easily distinguished, as it far outtops every other kind of tree in the scrub; and instead of the branches pointing downwards, as in the Moreton Bay Pine (*Araucaria Cunninghami*), they grow straight out from the tree, or rather with a curve or inclination upwards. Its height is immense; Leichardt mentions their being one hundred and sixty feet high before there were any branches; for in its wild state the branches only grow near the top of the tree, owing to the want of light in the scrub, but if planted out in an open space they feather quite to the ground. The wood can be used for the same purposes as Pine, and is rather more durable; it makes excellent sheep-hurdles. The leaves are of a rich dark green, and sharp-pointed, so much so as to be prickly. The cone, or fruit, is very large, and grows on the extreme tip of the tree. This fruit is only plentiful every third year. In appearance it is like an immense fir-cone, and is, before it is quite ripe, of a beautiful green colour. Measurement of the cone sent to the great French Exhibition:—twelve inches in length; twenty-two inches round the broadest part, transversely; nineteen inches and a half round in the narrowest part. The shape is a depressed globe. When the proper season arrives, the natives assemble in great numbers, from very great distances all around, for the purpose of eating the fruit, which they generally roast. Each tribe has its own peculiar set of trees, and each family its own allotment among them. These are handed down from generation to generation with the greatest exactness, and if any one is found in a tree not belonging to him, a fight, or 'pullen pullen,' is the inevitable consequence. This is believed to be the only hereditary personal property possessed by the aborigines; it is therefore generally respected, and this makes the 'Bunya-Bunya' interesting."

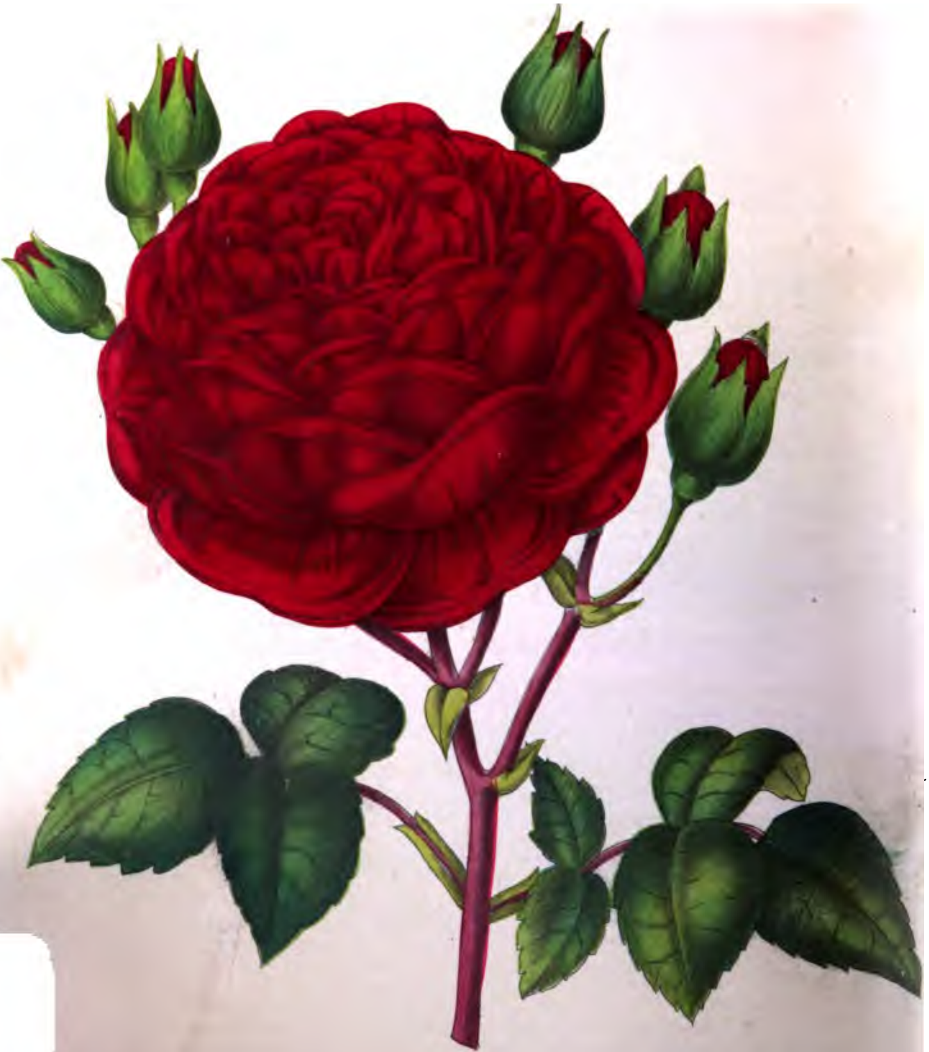
CHINESE PRIMROSE.—To have fine blooming plants that will continue in flower through the whole of the winter months, I proceed as follows:—To obtain strong plants, the seed should be sown not later than the end of April, in a well-drained pan, in a light sandy soil, and put into a cool frame, as near the glass as possible. When large enough to be pricked off into store pans, the young seedlings should be allowed an inch between each plant; when that space has been filled, let them be potted singly into three-inch pots, and as the pots become filled with roots, shift into a size larger pot, giving them their final shift into six-inch pots early in September. The compost in which I have found these plants to thrive best has been equal parts turfy loam and leaf-mould, and a little sharp sand. While growing, a cool pit or frame suits them best; admit plenty of air, and be careful not to over-water them. Treated in this manner the plants will bloom by the middle of November, and will continue in flower through the whole of the winter; to be seen to advantage they should be moved to the greenhouse.—*E. Laud.*

VICTORIA REGIA.—I have had this noble Water Lily remarkably fine this season. I planted it out on the 30th of April in the usual manner, in a mixture of loam and river-sand, in a brick tank heated with hot water. The tank is twenty-two feet square. The plant had at first only three leaves out on it, which were four inches in diameter; it then made from three to four leaves each week, and increased rapidly in size, until now it has six fine leaves on it in the most perfect condition imaginable, each measuring from six feet six to six feet nine inches in diameter. It is expected to produce flowers in a few days. Hearing that the Victoria has not succeeded very well in the neighbourhood of London this year has induced me to send you this notice, and as soon as the plant shall have flowered farther particulars respecting it shall be furnished.—*W. May, Hawkesyard, in Gard. Chron.*

TO DESTROY ANTS.—A singular discovery has been made in France, by a gentleman named Du Ribert, of a new and infallible method of getting rid of these pests of the garden. It is stated that, being much annoyed at the prodigious number of these creatures, he attempted to kill them with boiling water, but his plants being generally covered with them, this plan would not apply. He next scattered a few handfuls of guano over a basket of plants, and curious to relate, the effect of the application of this manure in a powdered form was eminently successful, and his garden was soon cleared. The same experiment has been practised in this country, and with the most efficacious results. We hope to hear from those of our subscribers who may be induced to try this simple plan.

WELLINGTONIA GIGANTEA.—Great numbers of the young plants of this most interesting Conifer, which have been grown in pots, have perished, while those which have been planted out have succeeded well. The plant appears to flourish best when grown in burnt clay with a mixture of charred roots or leaves; thus treated it does well in the open air. Doctor Lindley recommends basket culture, which consists in planting young specimens in a small wicker basket, which is plunged in the ground, and as the roots emerge through the sides the whole is carefully taken up and transferred to a larger size, the smaller becoming decomposed; thus the cramped roots resulting from small pot culture are avoided, and doubtless the plants will succeed to entire satisfaction.

AN ANCIENT OAK.—One of the oldest trees in Europe was struck by lightning in the month of July last. This tree, an oak, had been planted near Châtillon-sur-Seine, Côte d'Or, in 1070, by a Count of Champagne. The oak, which had therefore existed 786 years, measured seven and a half metres in circumference, and had produced acorns up to 1830.



PRINCE ALBERT.

The Floricultural Cabinet.

NOVEMBER, 1856.

ILLUSTRATION.

ROSE PRINCE ALBERT (BOURBON).

THE Rose of which the annexed is a faithful representation belongs to the Bourbon class, and we are indebted to Messrs. Paul, the eminent cultivators of this charming class, for its introduction to this country, being brought from Fontenay-aux-Roses, in the neighbourhood of Paris, where it was raised. Prince Albert is a Rose possessed of some admirable points, which make it a very desirable acquisition, being a very free flowering kind, blooming in large clusters from June to November; its habit is dwarf and compact, the shoots are short and stiff, the foliage rather large. The form and the brilliancy of colour of this flower make it a conspicuous object in a collection, and from its habit it may become valuable as a bedding kind, or for masses. A close pruning is advantageous to this class in inducing fine blooms.

REMARKS ON PENTAS CARNEA.

BY A PRACTITIONER.

THE Pentas is deserving of our notice from its long period of blooming, combined with excellent habit. Few plants are more easy of cultivation, while its delicate pink flowers are very pretty and attractive. The soil most adapted for its successful culture is a mixture of equal parts turfy loam, peat, and well-rotted cow-dung; the former broken small, and the latter finely sifted: the addition of a few small pieces of broken charcoal and a little river sand is also beneficial. The proper time for increasing by cuttings is at the end of spring. They should be taken off when two or three inches long, with a bit of the old wood attached. These should be inserted in a well-drained pot filled with a light sandy compost, and afterwards placed in a close hotbed, frame, or pit where a warm atmosphere and a little bottom heat can be obtained; in this situation, with due regard to watering, shading, etc., in a few weeks the cuttings will become well rooted, when they may be potted singly into three or four inch pots, and replaced in a warm situation as near the glass as possible. A temperature of from 60° to 65° will suit them well. With favourable weather a gradual increase of air should be given, shading slightly in bright weather, if necessary, and syringing overhead on sunny afternoons. As they advance in growth, the principal shoots should be stopped, and the plants repotted as the pots become filled with roots, observing that they should be topped a few days before or after potting, so as not to check the progress of roots and branches at one time. If cuttings are rooted early in spring, by July they should be good compact bushes, in nine or ten inch pots; if now large enough to suit the purpose of the cultivator, they may be allowed to flower, by discontinuing the stopping. As the flower-shoots advance, a little attention is requisite to tying-out, or otherwise supporting them in an erect position. When in bloom the plants may, if required, be removed to a cool situation, where, if protected from cold winds, they will continue a long time in beauty. When blooming is past, I place them in a cool dry house, and during winter give only sufficient water to keep the foliage in health; towards February or March, or earlier if required, I remove them to a warm house, previously pruning the branches into a compact form. When they have started into growth the roots should be examined, and, if necessary, a shift given into larger pots. Stopping may now be continued only as long as it may be desirable to increase the size of the plant, which will be in flower in six or seven weeks after the last stop. If pruned back after the flowers are faded, a second and third crop of blossoms may be obtained during the summer, and on the approach of autumn the plants should be thrown away, in order to make room for more young and vigorous stock.

By the above method the latter requirement may be readily supplied.

ON THE TREATMENT OF SPARMANNIA AFRICANA.

BY THOMAS HUGHES, ESQ., LANCASTER.

Sometimes we see large and otherwise beautiful specimens of this handsome conservatory plant suffering from improper treatment. The want of luxuriance in this plant is, in my judgment, attributable to two causes: on the one hand, to confinement of the roots, which disposes the plant to produce a greater quantity of flowers than it can support, without robbing a considerable portion of the nutriment sent up by the rootlets, and necessary for the completion of the usual growth in the branches; and on the other, too poor compost, which induces the plant to throw out a quantity of stunted, half-sized, and half-beautiful flowers, without affording the required strength to the branches.

Whether or not this deficiency be referable to either of the causes I have pointed out I am not fully prepared to state, but I am certain that a good-sized plant now under my eye grew and flowered remarkably well for the first four or five years of its growth, and was every spring greatly admired by all who saw it; after this a decline in the growth of the wood and luxuriance of the foliage, without any diminution in flowers, size excepted, took place, which rendered the plant unsightly instead of ornamental, for it always after appeared sickly.

In this state it remained two years. I potted it as usual, but, perceiving no improvement, I made an examination into the cause, which I commenced by turning the root-ball out of the tub, when, to my great surprise, I could not discover any defect in the roots, or want of strength in the soil; from which it appeared clear to me that the only means of restoring the health of my plant must be by enlarging the tub, and reshifting it in new compost, composed of two parts of strong, open, turfy loam to one of well-decomposed dung, carefully incorporated. This I did early in the spring of 1854, and I had last season the satisfaction of seeing my favourite plant in good health, clothed with a luxuriance of foliage such as I never expected to see gracing its noble head, and affording an ample background to its large umbels of nodding blossoms. The number of umbels this season I did not count, but they were very numerous; and the white petals of each flower, with the purple tips, resembling anthers, contrasted with its large cordate pendulous foliage, produced an appearance even more splendid than on former occasions. The plant now spoken of has generally stood in a rather light situation, and I am disposed to think, from what I see of the habits of some younger plants of this species, that they do best in a light situation.

If I had not observed very particular caution in administering water to my old plant, I should have attributed its ill health at once to want of due attention in this respect, but I was well aware this could not be the case; indeed the healthy and clean condition of the roots convinced me at once to the contrary. I have not an indiscriminate mode of watering, as is too often the case, but I water my plants as experience teaches me they want it, and I always endeavoured to keep the Sparmannia rather dry during winter, and watered it rather copiously during summer, and more particularly in the growing season. I also washed its branches now and then with clean water from the syringe, which kept it clean and free from insects. I propagate it in sand, or sand and loam mixed, with little trouble. After inserting the cuttings, I place the pot under a hand-glass in a little bottom-heat. I water them well at first, after which I do not, without they get very dry, give any more until rooted and ready for potting off, when I give a little; the young plants I bring on in a frame for awhile; from which I harden them by degrees to the greenhouse. During summer I give them frequent shifts, but more particularly in spring. The plants grow extremely well in the above compost, and will no doubt amply repay my care and attention in a season or two by an abundance of their singularly pretty flowers and fine foliage.

A FEW WORDS ON ROSES.

BY A NOBLEMAN'S FLOWER GARDENER.

It is almost universally acknowledged that the Rose is the queen of flowers, and that none are more attractive—none better reward the attention of the grower. The Rose is a native of all the four quarters of the globe—Europe, Asia, Africa, and America; but I am not aware that any of this genus have yet been found in Australia. The number of Roses is almost incredible, more than one hundred distinct species having already been described, while near three thousand varieties are named for sale in the various nursery establishments of England and France. Amid such a variety, all that I can do is to give a short description of the different kinds of Roses grown with us, and a few particulars of the more remarkable species. To commence, the commonest and best known is the Provence Rose (*Rosa centifolia*), a native of the eastern division of the Caucasus, from whence it appears to have been introduced at a very early period. Some of its varieties are very fragrant and handsome kinds, all distinguished by their close cabbage-like form (hence they are sometimes designated Cabbage Roses), the inward curving of their petals, and their slender footstalks, which give a peculiar drooping appearance to the full-blown flowers. The Moss Roses are all varieties of the Provence or Cabbage Rose. All these may be grafted standard high, on briars of the common wayside Dog Rose; a richly manured ground and open situation suit them best. The French or Provins Rose (*Rosa gallica*) is an erect-growing compact plant, with open flat flowers of considerable size, borne on stiff erect flower-stalks, forming a great contrast to the former species. It is found wild in France, and is cultivated on a large scale near the small town of Provins (department Seine-et-Marne), as well as at Fontenay-aux-Roses, near Paris, for making the well-known conserve of Roses. More than one hundred varieties are grown, but seldom or ever as standards, and they do not require a rich soil. The Damask or Perpetual Rose (*Rosa damascena*) is known by the large size of its prickles, the greenness of its bark, its reflexed sepals, and elongated fruit; one of the most attractive of this class is Lee's Perpetual, or the Rose du Roi. This species is very fragrant, and continues in bloom until November. As the present class are of very luxuriant growth, and produce abundance of flowers, they should be grown in very rich soil, and their shoots not cut in. The Chinese or Monthly Rose (*Rosa indica*) is the parent of another large family, comprising more than two hundred varieties and hybrids; the most attractive of these being the Tea-scented and the Noisettes. The Tea-scented Roses are delicate little plants, with large-sized drooping flowers, supposed to be hybrids between the Common and the Yellow China Rose; these are rather tender, and should be grown against a south wall, in a raised border, composed of equal parts of vegetable mould, light loam, and sand. Many growers take them up in November, and keep the roots in a pot in the greenhouse until spring, when they are again planted out. Noisettes are hybrids between the China and Musk Roses, raised by M. Philip Noisette, at Charlestown, in North America. This sort is very hardy, a very abundant bloomer (as many as sixty or eighty flowers being produced in a cluster), and are well adapted for standard and for pillar Roses. Climbing Roses are of four different kinds—Ayrshire, Evergreen, Cluster-flowered, and the Boursault. The first are all varieties of *Rosa arvensis*, a trailing plant, which, when left on the ground, throws out roots at every joint; they are climbers by elongation, stretching themselves upwards through a mass of hedges and bushes, and covering them with flowers. The branches are slender and feeble, and, if left without support, form a tangled mass; they grow vigorously, and will in some seasons make shoots twenty feet long. The Evergreen Rose (*Rosa sempervirens*) is from the south of Europe, and much resembles the Ayrshire in its flowers, differing, however, in the leaf, which is leathery, of more substance, smooth, and evergreen, and does not make such vigorous shoots; they are consequently not such good climbers as the Ayrshire, but more valuable, as undergrowth, for covering the ground in shrubberies, as they will flower freely even under the shade and drip of trees; the shoots should be pegged down over the ground they are intended to cover, at the joints, which will throw out roots, and the whole grow well. A sloping band, opposite a drawing-room window, covered thus has a beautiful appearance. Grafted as dwarf standards they look well, the shoots descending all round and forming a cone or pyramid. The Many-flowered or Cluster Rose (*Rosa multiflora*) is a beautiful plant, bearing large clusters of Roses, sometimes more than fifty in a cluster, and as many as two thousand have been counted on a plant. The Seven Sisters' Rose (*Rosa multiflora Grevillei*) is a variety of this species. The Boursault Rose is generally considered by botanists to be another variety of *R. multiflora*, but it differs from that species in several points. It is a hard-wooded durable Rose, producing abundance of flowers, and of free growth; the shoots, which are of a purplish red, and almost without thorns, being often fifteen feet long in one season. The flowers appear very early, and are known by their reticulated petals. All these Roses may be made to form beautiful objects on a lawn by training them up parasol wires, or a pyramid. Climbing Roses may also be trained over trellis-work, or up the trunks of trees. Musk Roses (*Rosa moschata*) form another family, though not a numerous one; they have very long slender branches, which are of themselves unable to support their large bunches of blossoms, and do best trained against a wall. They never require pruning, except to cut out the dead wood, the flowers being produced at the extremity of the shoots. The Banksian Roses (*Rosa Banksiana*), of two kinds, one with buff flowers, and the other white; the Macartney Roses (*Rosa bracteata* and *microphylla*), with some others, are natives of China, consequently rather tender in England, requiring a little protection in severe weather; they do well against a wall. The Alpine Rose (*Rosa alpina*), of which the varieties are very numerous, the American Yellow Rose (*Rosa lutescens*), and the Scotch Rose (*Rosa spinosissima*), of which there is a multitude of varieties, are hardy early-blooming sorts, which grow in nearly all soils and situations. The Double Yellow Rose (*Rosa sulphurea*) is more difficult to manage, and we meet with many complaints of its not flowering; it has large drooping flowers, resembling the Cabbage Rose, and is a native of the East. It should be grown in an open airy situation, in a light free soil, and should have plenty of light and air. It requires to be well supplied with water during the flowering season, and care should be taken to have the soil well drained. If trained against a wall, it should have a northern or eastern exposure, and the plant does best without pruning. It will also flower freely if grafted on the Musk cluster, or some say on the Common China Rose. There are many other Roses not yet included in my enumeration, the best known of which are the White Rose (*Rosa alba*), with its numerous varieties; the Yellow Austrian (*Rosa lutea*), which has the petals scarlet above and yellow beneath; the Sweet Briar or Eglantine (*Rosa rubiginosa*), with its very numerous varieties; the Dog Rose or Briar (*Rosa canina*), common in the hedges of England; the dark crimson China Rose (*Rosa semperflorens*); and the Fairy Rose (*Rosa Lawrenceana*). To these I may add the Isle de Bourbon class (*Rosa Bourboniana*), which have very beautiful, large, flat flowers, with rich velvet-like petals, much darker inside than out. They flower in autumn, and grow best in dry sandy soils, unless grafted on the Dog Rose, when they should be manured like other standards.

ON THE GENERAL MANAGEMENT OF GREENHOUSE PLANTS.

BY CLERICUS.

A GREENHOUSE is, properly speaking, an erection for the preservation of plants from frost in the winter months, and the number of different families of plants which may be kept in such a house, with proper management, is very great. The following observations are intended as an outline for the general treatment of such plants. First as to watering: this element, so essential to the growth of the plant, should never be administered indiscriminately, it being quite as objectionable to give too much as too little, and where there is a mixed collection, some will be found to require much more frequent attention in this respect than others. Many plants are lost through an excess of wet, especially where they are supplied with saucers for the pots, and those who are very fastidious about the cleanliness of the stage run great risk from this cause.

It is well to examine the roots of the plants occasionally, turning out the balls of earth to see if they be matted round the outside, in which case repotting will be necessary, especially if in a growing state, plants in that condition requiring this more than those at rest, which should at no time be excited until they begin to push; moreover, when a plant is set with blooming buds, and about to take its rest, until these swell, by the sudden excitement of being repotted or through increased heat, too much water, etc., the flower-buds are blighted, for the germs of leaves and incipient branches, which are at liberty to develope themselves freely, take up the growth. It will therefore appear that the best time to examine into the state of the roots is as soon as growth manifests itself, or when the flowers are going off. For such plants as are already established, once in a season will mostly be sufficient for repotting; in other cases it will require to be done as often as the pot becomes filled with fibres to the interior circumference. Another point of importance in promoting the appearance of plants is to keep them turned round, which will prevent their growing all one way, towards the light, and becoming shabby on one side; this greatly improves the condition of a plant, and ought by no means to be neglected, as nothing looks worse than an ill-grown specimen. Over-crowding is also a similar evil to be avoided; light and air should be permitted access to them all round. In my opinion plants should have a free space round them equal to their own diameter; but space being often very valuable, this point can seldom be attained; it will always appear, however, that the more room allowed, the better will the plants grow. When the weather is mild, even in winter-time, if there be little rain, it is beneficial to expose the plants. In the case of deciduous plants whose leaves have dropped, water should be withheld, but when their buds swell again moisture may be supplied, and increased in proportion as the leaves and branches extend themselves. The shelves of stages should be provided with a groove running lengthwise, to carry off the water and prevent drip, and which should be kept free from dirt and damp.

The paths and floor also should be kept dry and clean; pavement or concrete is the best material, and should have provision made for the water to run off which may drop from the plants or be spilled in watering; damp floors often cause mildew, and are very detrimental to the health of plants. Many denizens of the greenhouse, such as Azaleas, Camellias, Cactuses, and others, are turned out of doors during summer, for the benefit of air and to harden their growth; at this time it is usual to supply their place with annuals, as Balsams, Cockscombs, Clintonias, Rhodanthe, Salpiglossis, and others. These have been sown in March in a hotbed, afterwards potted and brought into the house, to take the place of such as have been set out, and which ought never to be done previous to the middle of May, or much risk will be run from cold and frost; by the middle of September they are returned to the greenhouse. During the heat of summer, when many fine plants are in flower, such as Hoveas Chorozemas, etc., it is beneficial, in prolonging their bloom, to shade them from bright sun; this is best effected by having a canvas roller-blind outside the house, or a thin calico blind inside. Shading, however, must be done judiciously, as the blind ought not to be drawn down an hour more than is absolutely necessary. All who put up a greenhouse ought to provide means for retaining the rain-water which falls on the roof, as this is the best water for plants; a pipe from the gutters may lead it to a tank or cistern behind the stage, where it will acquire the same temperature as the house, and in this state is best for applying to the plants; hard water fresh from a well or pump chills them, and is another cause of unhealthy plants. To warm a greenhouse in winter-time nothing is better than a system of hot-water pipes, combined with an economical boiler, such as those patented by Messrs. Weekes, of Chelsea. When the temperature descends below thirty-five degrees a fire should be lighted, if there be indications of frost. By the end of August, the plants should be turned out, and the entire erection cleaned; the glass well syringed or sponged, dirt washed off the walls and woodwork, and whitewashing and painting done, if necessary. Many persons at this time fumigate the house with tobacco, to destroy every appearance of green fly, and use sulphur for the red spider, so that everything is clean and tidy for the plants when they are brought back; previous to which the pots may be washed, the soil stirred at the surface, and such as require repotting should have the operation performed.

BRIEF REMARKS ON THE PINK.

BY MR. S. TAYLOR, WELLS.

Pipings struck under hand-glasses are the most ready and certain means of propagation, and good fresh loam with about one-fourth cow-dung, well decomposed and thoroughly incorporated, is the best compost to grow the Pink; too rich soil is unsuitable, making the colours run as it is termed. Wire-worms are very destructive pests, and before the above compost is used, it should be well turned over and examined, to see that none of those insects are in it. It is best to devote a bed entirely to this flower, which may be made a foot in depth. August is the best time for planting, and they should be put in nine inches apart, taking care not to plant too deep, and pressing the soil round the neck of the plants. In dry weather attend to watering, but in winter they should be kept rather dry. As spring comes on let the soil be stirred, and a good top-dressing will assist the bloom, as well as invigorate the plants. When the bloom begins to show, provide some slender sticks or twigs, fix one to each plant, and tie them up loosely with twine. As the flowers begin to expand, if it be intended to have perfect blooms, examine the pod, and should any be discovered opening more on one side than the other, with a penknife slit the closed divisions equally, but not so far as to let the petals fall out of place, and then tie round the lower portion of the pod with twine or fine matting; this will prevent bursting, and preserve the flower uniform in shape. A thin covering of muslin stretched over the bed in the blooming season will be found to prolong the flowering, as well as to preserve the colours clear and distinct. Pinks are easily forced, and are then a very acceptable addition to our early spring flowers, and this may be done with very little trouble. So soon as it is possible to get good pipings from forced plants, strike them in sand under a hand-glass, in a gentle heat, and when rooted proceed to "harden off" gradually, after which put them out in the bed, where they will make nice plants ready for potting by the month of October; after this they should be kept in a cold frame. Among the kinds well adapted for forcing are the Pheasant's Eye, white, with a dark eye; Moss Red, a later variety; and the Paddington Pink, still later. During forcing they should be placed close to the glass, in a house or pit where the temperature is kept about fifty degrees, and they require a full exposure to the sun. Under this management they will bloom in February, and amply recompense the small care which they have required, no flowers repaying better the trouble bestowed upon them.

A FEW SHOWY HARDY ANNUALS.

BY MR. GEORGE THOMPSON, BLYTH.

HAVING had frequent applications from amateurs and lady gardeners requesting the names of a few of the best annuals, I shall be glad if you will favour me by the insertion of a few descriptive remarks on the same, which no doubt will be useful to others who take in your valuable work. As to the choice of annuals, a great deal depends on the position they are intended to occupy; but for small gardens, the sorts should be such as are neat in appearance, dwarf in habit, distinct in colours, and free flowering. The following are a few of this character.

Asters (China and German): some sorts, such as *nanus*, are remarkably fine flowers, and of such dwarf habit, that I have grown them not more than three inches high; small patches along the edge of a border, where each patch is a different colour, are very pretty. *Bartonia aurea*, a Californian annual, with golden yellow flowers, produced in abundance, growing one foot high. *Cacalia coccinea*, an old plant, but not frequently seen in gardens, has very pretty flowers, of a fine scarlet colour; its dwarf habit, not exceeding nine inches in height, makes it a desirable addition to small gardens. *Campanula speculum*, generally known as Venus's Looking-glass, is a very attractive plant, bearing a profusion of its pretty purple and pink blossoms for a length of time, and growing about one foot high.

Clarkia pulchella and *C. pulchella alba* are well-known annuals, of bright pink and white colours, both very desirable, and no garden should be without them. *C. elegans* is a taller species, of more robust growth, but neither so pretty as the above, nor so elegant as its name would imply. *Clintonia pulchella*, a very diminutive and very beautiful thing, suitable for small beds, as it seldom exceeds three inches in height. The flowers are purple, with yellow and white centres. It is best raised in pots, and afterwards removed to the open border. *Collinsia bicolor* and *C. grandiflora*, flowers blue, pink, and white, well worthy of their very general cultivation. *Delphinium ajacis plena*, the dwarf Rocket Larkspurs, are admirable in well-contrasted patches. *Erisymum Peroffskianum*, from Higher India, introduced by a Russian botanist (whose strangely sounding name it bears), is a very showy annual, the flowers being brilliant orange, in spikes; this is a good thing for making bouquets. *Gilia tricolor*, a dwarf and very neat plant, seldom exceeding nine inches in height; the flowers vary in tints, some being white, others pink; it is a profuse bloomer. *Iberis umbellata*, Candytuft, so well known as scarcely to need description. The purple and white varieties make beautiful edgings to flower beds. *Leptosiphon densiflorus* is another annual, which is very pretty; its lilac-coloured flowers, borne in abundance, render it well worth growing. Its habit is dwarf and neat. *Lupinus nanus:* of all the tribe of Lupines this is the dwarfest kind and most free flowering. A small bed of it is a splendid sight, being a mass of pretty blue and white flowers. *L. luteus*, the yellow species, looks well in the middle of a bed of the former kind. *Nemophila insignis* and *N. maculata* are two of the best of this genus; the former clear blue, and the latter white, with a purple blot in each petal. A few plants soon cover a small-sized bed, and bear a succession of their sweet blossoms. I must not omit that universal favourite, Mignonette, *Reseda odorata*, from my list, though description is needless. *Schizanthus humilis* and *S. pinnatus* are decidedly as handsome and singularly delicate Californian annuals as any we have. Their pretty pink, white, and yellow blossoms, of curious form, excite the notice of every one. They do best when raised in pots, and afterwards turned out. *Viscaria oculata* is a plant with pretty blossoms, though it does not often flower well, and the habit is somewhat naked. *Scabiosa nana* is a neat hardy annual, with flowers of diverse crimson and purple colours, a great favourite of the bees; a patch is worth growing. Poppies, of the fringed and striped sorts, both single and double, *Papaver caryophylloides* and *P. rhœas*, every one should sow in their garden, however small, for, although their bloom does not last long, they are as showy as any hardy annual I know of. When annuals are sown, I advocate a practice which is not generally adhered to, that is, to write labels for each, comprising the scientific and English names, which may be referred to at any time, instead of the untidy practice we often meet with, of sticking the seed-paper in a split stick, inside the bed or patch where the annuals are sown.

ON STOVE AND GREENHOUSE PASSIFLORAS.

BY X. Y. Z.

SEEING an inquiry in your last from one of your correspondents, requesting information on this head, I am happy in giving him a list which I have made of all the species, both stove and greenhouse, which have come under my notice during visits made by me lately to several establishments of excellence in this country. To those who have convenience for growing a number of tender climbers, few plants are so easily managed or are more beautiful than the various kinds of Passiflora; some, in addition to splendid flowers and exquisite fragrance, bear a profusion of very pleasant eatable fruit; others, although destitute of the two last qualifications, are yet so highly ornamental, that they can scarcely be cultivated to too great an extent. Of those which bear edible fruit in addition to their other attractions, the following have been "made a note of."

P. alata: an old species, introduced from the West Indies in 1772, which will grow, flower, and fruit abundantly in almost any situation, either in some waste corner of the stove, or even under the floor. *Buonapartea:* this kind is much less known than it deserves to be. The flowers are deep red, with a purple and white crown, and fine fragrance. It does not thrive well unless the roots come in contact with bottom-heat, and have plenty of room to spread; it then flowers freely, and bears large, orange, pear-shaped fruit, full of watery pulp, of a pleasant flavour. *Coccinea:* this handsome scarlet flowering species was introduced from Guiana in 1820. The fruit is about the size of a small apple, and contains a very sweet pulp. *Edulis* is too well known to need much description; it is nearly hardy enough to endure the greenhouse, but will not ripen its fruit in any situation except the stove. The fruit is purple, acid, with a rather peculiar flavour, and is stated to make a most delicious preserve. *Incarnata:* a greenhouse plant, which has been introduced since 1629, but is far from being common in collections. It very commonly dies down to the roots in autumn, and regerminates again in spring; it has therefore been considered an herbaceous plant. The flowers are pink, and very fragrant. The fruit usually grows to about the size and the colour of an orange. *Laurifolia:* a native of the West Indies and South America, whence it was introduced in 1690. The flowers emit a pleasant fragrance, and the fruit is yellow, rather larger than a hen's egg, and contains an eatable pulp. *Maliformis:* although introduced in 1731, it is fully equal to many fine ones of a much later introduction. The flowers are large and dull red, with blue rays, and very sweet scented. The fruit is yellow, and about the size of a large apple. *Phœnicea:* a species introduced in 1831; the flowers are dull crimson, and the fruit about the size of a hen's egg. *Quadrangularis,* to do well, should always be planted where it receives bottom-heat. Cut in well every autumn, after it has done flowering, renew the soil, either wholly or in part, every spring, just before it starts to grow, and when in flower give a great supply of water. *Serratistipula:* a native of Mexico. The flowers are not very showy, but the fruit is very sweet and palatable. *Tiliæfolia:* a native of Peru, and introduced in 1823. It has beautiful red flowers, and the fruit is very handsome, and the flavour pleasant. The above are natives of the tropics, except *Incarnata;* they consequently require the stove, and thrive best in a strong moist heat, with a good supply of water when growing. They are all of strong habit, and should be planted in a good rich loam with one-fourth rotten dung. Excepting *Edulis,* none of the above species will set their fruit freely, unless the stigma be fertilized by the pollen of others; for this purpose no kinds are so well adapted as *Edulis* and *Cœrulea.* Those Passifloras which are alone ornamental, and on that account deserve extensive cultivation, are the following:—*Alata-cœrulea:* a hybrid, which grows very freely in a cool part of the stove or a warm greenhouse. The flowers are rose colour and white, the crown blue and white. *Cœrulea* and its varieties are all nearly hardy, and grow freely in light soil, trained against a wall in the open air. *Cœrulea-racemosa* is another valuable hybrid, raised betwixt the two species whose name it bears. The flowers are purple, and produced in great abundance in a cool greenhouse. *Kermesina:* this brilliant species is a free flowerer, of very slender growth, and makes a fine appearance in the stove. *Loudonii* has much the habit of the last, but the leaves are larger, and are not coloured with purple beneath; it also requires a warm stove and a very moist temperature. *Fragrans* is a fine species, a native of the West Indies and South America. The flowers are purple; the plant requires the cool stove. *Mooreana* is a native of Buenos Ayres, and was introduced in 1837. The flowers are very fragrant, nearly the colour of *Cœrulea;* this plant is almost hardy. *Picturata:* a native of the Brazils, bearing rose-coloured flowers, and purple and white rays; it requires the heat of the stove. *Racemosa:* flowers scarlet, exceedingly handsome; a native of Brazil, requiring the heat of the stove. *Sanguinea:* hybrid, with fine large deep scarlet flowers, very handsome; requires the heat of the stove.

The Passiflora requires a soil rendered light by the addition of heath-mould. Never sift the soil for any of them, but roughly break it, and always give *a good drainage.* All the species strike readily from cuttings planted in sand, and placed in a brisk heat.

WHAT IS A FLORIST'S FLOWER?

BY AN OLD FLORIST.

THE great difference between wild flowers and cultivated ones consists n the latter being so much changed, or as we term it "improved," y culture as to be greatly altered in appearance from their original representative; but, let me observe, all plants are not thus capable of being so altered, though generally every individual of the same species varies slightly in some respects from its brethren. Among trees, for instance, some have an erect manner of growth, while others, of precisely the same kind, will assume a drooping habit; and among herbaceous plants the colours of the flowers will often materially differ, and some even show a disposition to become double. The more variable a plant is in a state of nature, the more readily will it become changed by the different modes of cultivation practised on it, though many plants scarcely differ under any circumstances; and, as a general rule, fewer annuals become changed than perennials, and fewer ligneous plants than herbaceous. The early floriculturists considered changed herbaceous plants only as florists' flowers; but florists of the present day admit not only suffruticose plants, as Pelargoniums and some Calceolarias, but also shrubs, as Roses and Camellias. Flowers, to constitute florists' flowers, must become subservient to certain laws, the chief of which is form. The outline of every florists' flower should be circular, or as nearly so as possible, as may be readily perceived by drawing the outline of the most esteemed Tulips, Carnations, Pansies, etc. A change of the form of the flower, however, is not generally the first departure from nature in a plant, but is rather the result of culture or accident; a departure from the usual colour of the flower, or normal habit of the plant, is, however, by no means unusual; and the former constitutes, in conjunction with form, the chief merits of florists' flowers. Let us examine, for example, the flower of the wild Carnation. In a state of nature, we shall commonly find it varying from flesh colour, rarely white, to dark crimson, and the outline, instead of being circular, angular; but, by cultivation, the flower becomes much increased in size; the stamens are metamorphosed into petals, rendering it what is called double; by which means, and by the enlargement of the original or guard petals, the angles are filled up, and the outline rendered circular; the ground-colour also changes to pure white, striped with crimson, scarlet, pink, or purple, in which case it is called a Carnation; or with a white or yellow ground, dotted and edged with red, purple, or scarlet, it is termed a Picotee. The flower, however, is not the only part that undergoes a change, the whole plant has also departed from the original type; it has become much more vigorous, with leaves broader and blunter than in the species. The great distinction, however, between native species and accidental varieties is the incapability of the latter of perpetuating themselves; for, should they produce seed, the greater portion of the plants raised therefrom will be in a transition stage to the original stock. The true way therefore to increase or perpetuate varieties is only to raise seedlings from the most decidedly marked variations, and to remove them from the immediate neighbourhood of the original species, to which they always have a tendency, more or less, to retreat. The Carnation is a familiar example of this, for the pure white ground-colour of many varieties gradually becomes flushed with pink, and ultimately changes to dark crimson, which, in most cases, defies all the art of the florist to change again to white.

Vegetable physiologists are undecided as to the causes of these variations, but the most generally received opinion among florists is that, in the case of the Carnation, the running back to the original colour of the species is occasioned by the application of too powerful stimulants in the cultivation. The changes and varieties in the colours of flowers are innumerable, and constitute, as we have before said, the great attraction of florists' flowers. No cause is assigned, but there appear to exist certain fixed laws by which colour is affected; as the Carnation, which in its pristine state is crimson, becomes, by cultivation, white, slate coloured, and dull yellow, but never blue, and seldom bright yellow; and the Dahlia includes varieties of almost every shade of colour, except blue. Besides changes in form and colour, florists' flowers undergo transmutations of various organs; for instance, in order to render Carnations and Pinks double a multiplication of petals takes place, and the stamens are expanded and become petaloid; the Rose is rendered double by a multiplication of petals; and the Anemone by a regular series of transformations of all the organs, from the sepals to the pistillum.

Many florists' flowers have been very much improved by cross-impregnation, of late years, not only between varieties of the same species, but also between two distinct kinds. Had not the wild Violet been crossed with *V. altaica* and others, our gardens would never have been decorated with large round Pansies of every imaginable hue and combination of colours. Cross-impregnation, in addition to altering the properties of the flower, occasions a considerable change in the habits of plants; thus the large fine flowers that are produced on tall diffusive-growing plants may, by careful hybridization, be produced on dwarf thick-set plants; and bright-coloured flowers, without a dark spot to relieve them, may have the spot given them by carefully crossing them with some allied spotted kinds. Now that the theory of hybridization is so well understood, a vast untrodden plain lies open to the florist, which, in the course of a few years, will doubtless be productive of many unexpected novelties; new races will be springing up every day, and the already numerous varieties of plants increased tenfold. As proof of this, we have only to look at the numbers of new Roses and Calceolarias that are brought into notice every season. A few years back we could scarcely have credited the changes which have been effected, and reviewing the past we are led to look forward to a wondrous future of florists' flowers.

ON THE TREATMENT OF NEW HOLLAND PLANTS.

BY W. T——N, ESQ., EPSOM.

I HAVE taken great interest in this singular tribe of plants, and have had a large house put up for their especial use, in which Banksias, Dryandras, etc., are now well established. The best plan for growing the former species well is to make a mixture of one-third peat, one-third loam, and one-third sand. The pots should be well drained in the following manner: place a piece of potsherd about half-way over the hole at the bottom of the pot, then lay another piece against it so as to leave a hollow space; place some smaller pieces round them, and others, broken very small, on the top of these. All plants belonging to the Proteaceæ should be drained in the same manner, for the roots are very fond of running amongst the broken potsherds, and there is not so much danger of their being over-watered. Care must be taken not to let them flag for want of water, as they seldom recover if allowed to get very dry; they should also be placed in an airy part of the greenhouse when in-doors, nothing being more beneficial to them than a free circulation of air. Cuttings are generally supposed to be difficult to root, but they will root readily if properly managed. Let them be well ripened before they are taken off; then cut them at a joint, and plant them in pots of sand, without shortening any of the leaves, except on the part that is planted in the sand, where they should be taken off, quite close; the less depth they are planted in the pots the better, if they only stand firm when the sand is well closed round them. Then place them under hand-glasses in the propagating-house, but do not plunge them in heat. The glasses must be frequently taken off, to admit air and to dry them, or they are apt to damp off. When they are rooted, the sooner they are potted off in little pots the better, as the sand is liable to canker their roots if left too long in it. When potted off, they should be placed in a close frame, but not on heat, as a bottom-heat will destroy their roots; and they must be hardened to the air by degrees. Plants raised in this way have better roots, grow faster, and flower sooner, than plants raised from seeds. In raising them from seeds, they should be sown in the same kind of soil as the plants are grown in, and placed in the greenhouse; or if it is in summer, they will come up earlier if placed out in the open air. They will soon make their appearance, and they should be potted off in small pots, for if left in the seed-pots too long they are apt to die, and are more difficult to move with safety.

Dryandra is a beautiful genus belonging to the Proteaceæ, and is nearly related to Banksia. The species thrives best in an equal mixture of light turfy loam, peat, and sand; the more sandy the soil is the better they will thrive. The pots must be well drained with potsherds, which should be broken very small, as the roots are fond of running amongst them. Ripened cuttings, taken off at a joint, and planted in pots of sand, without shortening any of the leaves, will root freely if placed under hand-glasses, but not plunged. As soon as rooted they should be potted off, as the sand will injure their roots if they remain too long in it; then they should be placed in a close frame till they have taken fresh root, and must be hardened to the air by degrees. August and September is the best time for potting the cuttings; they will then be rooted by spring, or many of them. The genus Aulax thrives best in a very sandy loam, with a great many potsherds, broken small, at the bottom of the pot, to let the water drain off freely, as they frequently get too much water, which soddens the mould, and stagnates their growth. Ripened cuttings, taken off at a joint, and planted in a pot of sand, will strike root if placed under a hand-glass, in the propagating-house, and the glass be occasionally left off, an hour or two at a time, to give them air, and keep them from damping, which should be done in a morning, before the sun has much power, or it will make them flag and injure them. Plants are readily raised from seeds, which should be sown in a mixture of two-thirds loam and one-third sand. As soon as they come up, they should be planted off in small pots, in the same kind of soil, as they are very apt to die if left too long in the seed-pot.

ON THE VALUE OF LIQUID MANURE.

BY F. GARDENER.

NOTWITHSTANDING the repeated recommendations of practical men in favour of liquid manure, but little attention is paid to the subject. If it be of the vast importance which it is said to be, why is it so little used? Why does not every garden contain its tank, in connection with the manure heap? To make such an arrangement, to provide a receptacle to retain the juices of the decaying weeds in the rubbish heap, can neither be difficult nor expensive; and if it be practicable and easy of accomplishment to provide for the latter, the same arrangement would be suitable for the manure heap. A common tub or cask of any kind will answer the purpose, and if it is leaky of itself, it may be rendered water-tight by puddling round the outside. It is supposed, of course, to be placed with its upper end level with the ground, or as much under the surface as will ensure drainage running into it. I have applied it in various ways, and in every instance with results which have proved its value. On my flower beds I have used it freely during winter, and especially in frosty weather, when snow was on the ground. I have several tanks, but they are all connected with each other. In one of these I have fixed a large wooden pump, through which the liquid is drawn and carried to the flower beds and borders, as time permits.

ON THE PROPAGATION OF PLANTS BY CUTTINGS AND LAYERS.

BY A PRACTICAL MAN.

IN regard to propagating by cuttings, fine white sand is generally used, into which the cutting is inserted; below which, after the pot is sufficiently drained, that sort of soil is placed in which the genus is found to thrive. There are few plants that are capable of reproduction by this means that will root freely in sand, and many of the freely growing sorts will strike in the compost best adapted for the genus. The shallower that all cuttings are put in the pots, the sooner and better they will root. The sand must never be allowed to become too dry, for in such a case much injury might be done before the cultivator would observe it. Neither ought they be kept too moist, for fear of damp, which should be guarded against by frequent observation, and by once or twice a day wiping the glasses with which they are covered. The sooner that cuttings are potted off, after they are rooted, the better; and if carefully shaded, and not put into too large pots, the better they will thrive. The sand should be completely removed from the roots of the cuttings previously to potting off, for it is very injurious to most plants, particularly those that are of delicate growth. This circumstance does not appear to be generally known, at least if it be, it is not always acted upon, and to this may be attributed many of the failures which usually attend the potting off of cuttings.

Plants originated from cuttings taken from plants in a flowering state have an advantage over seedling plants, as they come into bloom much sooner, and often while quite small; thus Geraniums, and many other plants, propagated from the terminal shoots that would produce flowers, are found to root and come into bloom when only a few inches high, and often in pots of not more than three inches diameter. Seedling plants, although they in general grow much more luxuriantly, seldom produce their flowers till they have attained nearly their full size. Plants originated by laying also bloom soon, but can seldom be trained, excepting in the case of creeping or climbing plants, to anything like a handsome head. But laying is the only means by which some plants can be propagated with facility, and hence it becomes necessary.

HINTS ON NEGLECTED PLANTS.

BY F. B. W.

There are not a few plants of which the capabilities have scarcely been sufficiently tested, and which are, I am persuaded, more deserving of a greater share of notice than they have hitherto received. Concerning these I shall occasionally forward a paper for insertion in your widely circulated *Cabinet*, hoping by that means to draw attention to them, and to induce an extended trial of their merits. Of such is the ***Myosotis azorica***, a plant useful in the greenhouse, as well as for bedding purposes or window decoration; a good-sized specimen in full flower looks very attractive, the blossoms being numerous, of a rich purple colour, and its management is such as to demand but little trouble, though it cannot often be grown to a size which will develope its beauties in one season. It is best raised from seeds, which will require the usual management of greenhouse seeds. When the young plants have gained strength, they should be potted off in medium-sized pots, and as soon as filled with roots, shifted to a few sizes larger; as autumn approaches they will require to be placed near the glass, in which position they may remain until spring. Two or three plants in one pot make nice bushes. When growth has fairly begun in the ensuing spring, repot them in large pots, say twelve inch, and find a rather warm situation for them in the greenhouse, where they will make rapid progress, during which it is best to train them to neat stakes. By midsummer they will have attained a height of about eighteen inches, making compact bushes, and in July will be loaded with their lovely blooms, resembling the delicate Forget-me-not of our ditches, but of richer colour and superior size. When in bloom it may be removed, if desired, to the window of a drawing or sitting room, and prove that *Myosotis azorica* is a plant not so generally cultivated as it deserves to be. The best compost, and one in which it will be found to delight, is a mixture of peat, loam, and white sand; and a very fibrous peat is to be preferred in the above compost, when it can be had. After the bloom is past, the specimen may be either cut back, for another year, or what is better, thrown away to make room for fresh plants, a succession of which should be kept up.

Another plant that ought to be cultivated in every flower garden, which is a great favourite of mine, and useful for winter decoration, is the Helleborus, or Christmas Rose. If the weather be mild we have them in flower as early as November, and continue till spring; they do well in pots, and if divided by the roots in April they will flower well the following winter. In summer the pots should be placed in a bed of ashes, in a situation screened from the too powerful solar rays; if removed to the greenhouse as winter approaches, they will come in flower early, and at a time when their pleasing blossoms are extremely acceptable.

REMARKS ON THE RED SPIDER, OR PLANT MITE.

BY S. W. J.

NEARLY all kinds of plants are at one time or other infested with some species of mite. The *Acarus telarius*, however, is our greatest pest; for although it is well known its ravages could be prevented by humidity, yet there are seasons when much humidity cannot be allowed. These little creatures multiply at all seasons of the year, and their fecundity is prodigious. The females lay their eggs generally at the back of the leaves, because there they are sheltered from intense light; the eggs are very minute, and not collected in masses, but scattered thickly all over the leaves, as may be seen with a microscope. In a short time after deposition they are hatched, and the young begin to move about upon the leaves. As they advance in growth they become more and more red; when arrived at their full size they are dark brown, and slightly hairy. From the time they issue from the egg until they are fully grown, they cast their skins several times, becoming each time something darker in their colour. They construct for themselves close silken webs, by which they travel from one leaf to another, and these webs are made thick at the back of the leaves, to shelter the young from the effects of moisture, which would soon prove fatal to them.

A moist atmosphere and free growth of the plants are certain preventives to the increase of this insect, but it becomes necessary to use other means sometimes. The grand antidote is sulphur, which destroys mildew, and effectually rids the plants of the red spider.

The method which is most successful in the application of this substance is as follows, and may be depended upon to destroy every insect if properly applied, and persevered in. I have myself never known it fail. Take half a pound of flowers of sulphur, put it into a watering-pot, and add as much water as will make it into a paste, afterwards add more, until sufficiently thin; pour it into a garden engine, or other vessel capable of holding four or five gallons, then add as much water as will make it into four gallons. Water the infested plants with this overhead, either with a syringe, garden engine, or watering-pot, and repeat the application until every insect disappears.

NOTES ON NEW AND SELECT PLANTS.

167. Argyreia hirsuta. Nat. Ord. *Convolvulaceæ.*—A very handsome Bindweed, introduced to Kew from the Paris garden, in 1850; a native of India or China. The plant is of large growth, and has flowered freely trained along the rafters of a stove. The blossoms resemble those of a large Ipomœa, and are of a bright lilac colour, four inches and a half across the mouth. The stems are downy, the leaves large and bright green, and habit free. (*Bot. Mag.*, 4940.)

168. Lysimachia nutans. Nat. Ord. *Primulaceæ.*—From the Cape district, flowering in July in the open air; but the plant requires protection to the roots in winter. The flowers are borne in a spike, and are deep purple-crimson. (*Bot. Mag.*, 4941.)

169. Codonopsis rotundifolia. Nat. Ord. *Campanulaceæ.*—A rambling plant of no great beauty, bearing green campanulate flowers, lately introduced to Kew, through seeds sent by Dr. Royle from Himalaya. (*Bot. Mag.*, 4942.)

170. Orobus Fischeri. Nat. Ord. *Leguminosæ.*—A rather pretty species of Vetch, which, although not new, is rather scarce. It was originally sent to England by Dr. Fischer, of St. Petersburg, but is supposed to be a native of Italy or Algeria. It is an erect-growing plant, with very narrow leaves and pretty purple-crimson flowers, perfectly hardy, and free blooming. (*Bot. Mag.*, 4943.)

171. Dendrobium Falconeri. Nat. Ord. *Orchideæ.*—This is a

very distinct and splendid new member of the genus, from the mountains of Bootan, where it is stated to grow at an elevation of 4000 feet. A plant in the possession of George Reid, Esq., of Burnham, Somerset, threw out a spike the present year nearly four feet in length, carrying upwards of sixty lovely blossoms; the petals are white, tipped with a broad patch of deep purple, spreading horizontally; sepals pale rose, tipped with dark purple, and the limb yellow, having a broad purple central spot and extremity; diameter of the flowers about four inches. The leaves are few and small. This species will prove a great acquisition to lovers of Orchids. (*Bot. Mag.* 4944.)

172. Mucuna pruritia. Nat. Ord. *Leguminosæ.*—A singular-looking climber, which flowered in the Palm-house at Kew during the past summer. The flowers are about two inches long, dull purplish black, borne in large bunches, which at a distance appear like bunches of grapes. It is a native of the East Indies, and very abundant in the neighbourhood of Madras. Seeds were brought from India by Dr. J. D. Hooker. (*Bot. Mag.*, 4945.)

173. Lonicera Browni. Nat. Ord. *Caprifoliaceæ.*—From the Columbia and vicinity of Fort Vancouver, where it was discovered by the lamented Douglas. The flowers are orange-red, and with the clear yellow stamens and throat make a desirable appearance; they are, however, scentless. The leaves are broad and yellow-green. (*Flor. des Serres*, 1133.)

174. L. splendida. Nat. Ord. *Caprifoliaceæ.*—This pretty species of Honeysuckle inhabits the Sierra Nevada, in Spain, and is remarkable for the pale leaden colour of its stalks and foliage. The flowers are pale yellow and buff. (*Flor. des Serres*, 1130.)

175. Rose Auguste Oger (*Tea*).—A handsome variety, raised by M. Oger at Caen, in Normandy. The flower is of good size and form, of delicate blush, and is said to be extremely fragrant. (*Flor. des Serres*, 1131.)

176. R. a Fleurs vertes (*Bengal*).—Morphology is curiously illustrated by this Rose, whose green flowers exhibit petals transformed to leaves, the corolla being totally altered in its nature. It is more a botanical curiosity than anything else. (*Flor. des Serres*, 1136.)

177. Jacquemontia cælestis. Nat. Ord. *Convolvulaceæ.* The azure-blue flowers of this pretty climber have suggested the specific name. It is a native of the hot regions of South America, and consequently requires stove temperature. (*Flor. des Serres*, 1132.)

178. Hypericum oblongifolium. Nat. Ord. *Hypericeæ.*—Messrs. Veitch have the merit of introducing this plant, through their excellent collector Mr. Thomas Lobb, who found it on open hills at Mofflong, Khasia, India. The flowers are large, and deep orange or reddish yellow colour, borne at the ends of the branches in forked cymes; the sepals are large, roundish ovate, very blunt, and slightly serrate; the leaves are firm, sessile, ovate, and punctured with numerous small transparent dots. (*Journ. Hort. Soc.*.)

QUESTIONS, ANSWERS, AND REMARKS.

Ardisia.—Will you or any of your subscribers favour me by stating what compost is suitable for this tribe, and what is the proper mode of propagating it?—*A Reader.* [These plants are very ornamental for their scarlet fruit; they all grow in loam and peat, and cuttings root freely in sand, in a moist heat, under a hand-glass. They may be also increased by cuttings of the root placed in heat.—*Editor.*]

Crinums.—These bulbs are known variously, by some botanists as Pancratiums, by others as Amaryllis. They should be grown in rich loam mixed with a little peat and sand, and allowed plenty of pot room. I have for two years past had a fine show of them, and, if acceptable, shall be happy to send you a few lines on my treatment.—*P.* [We shall feel obliged.—*Editor.*]

Medinilla magnifica.—Having a fine plant of the *Medinilla magnifica*, I should be glad if some of your readers would give me the method best suited for propagating this magnificent plant, as I fail in striking it.—*H., A Subscriber.*

Passifloras.—In compliance with the request of your correspondent A. D, in the September number of your widely known *Cabinet*, I would mention a few Passifloras that I have grown in my greenhouse for several years, though I am not able to give him a list such as he requires. Passiflora Loudoni, flowers a most brilliant crimson; P. Kermesina, red; P. edulis, the purple fruited, it does not, however, fruit with me, though it flowers tolerably well; P. cæruleo-racemosa, the common blue clustered; and P. incarnata, flesh coloured, or pink. They are all increased by cuttings of the young shoots planted in sand, and covered with a glass, as also by layers and seed when the latter can be procured. Any moderately rich light soil suits them; and, contrary to the generality of the genus, they all flower well in a low temperature.—*W. C., Canterbury.*

Rootwork.—The roots of trees, and especially large roots, including the stool or base of the tree, after the trunk has been cut down to the ground, may be combined together in various ways, useful, ornamental, or curious, in gardening. Two or three stools of large size grouped together on a lawn, with mould and plants placed in their interstices, form a striking contrast to the smoothness and high art displayed on the general surface of the lawn. The plants placed among the roots, whether in pots concealed by mosses, stones, or mould, or planted in soil, should never be of indigenous kinds common in the locality, for these might be mistaken for weeds, but of exotic kinds, such as Geraniums, Petunias, Maurandyas, etc., or of British or European Alpines, of small size and neat foliage. The idea to be kept in view is that of creating artificial ornaments without much expense; and therefore the roots must never appear to have been left where they are by carelessness, but placed by design, and with reference to the composition of which they form a part. In many situations, conglomerations of roots as a receptacle for plants are more pleasing than those of stone, because they display less effort, and seem a more natural and easy way of forming a nidus for ornamental plants. Too much effort and expense for attaining any object is never altogether so satisfactory as when the same is obtained with ease and economy. Hence rustic seats in a pleasure ground, and rustic vases, or other vessels for containing plants, are more satisfactory than cast-iron seats or marble vases, unless the latter be connected with some building. Roots may also be combined together so as to form seats, open or covered huts, grotto-like structures, and rustic or grotesque bridges; and one object to which they are particularly suitable is for placing on the margin of pieces of artificial water, along with trees, bushes, or plants. A smooth expanse of water, like a smooth lawn, requires shade and roughness to contrast with it, in order to produce a striking effect; and roots at once supply both roughness and shade. In placing them, a part of the root should always be covered by the water, and another part by the soil; and by planting a young tree or bush adjoining the root, a double contrast is produced between the root, which gives the idea of an aged tree long since felled or dead, and the erect young shoot, which is to become a future tree. The shadow of the group in the water adds to the interest of the scene. A very common error in the use of roots is that of mixing them with stones in rockwork; this must at all times be shunned.—*D. F., Fareham.*

"FERNY COMBES."—At page 295 I find stated, on the authority of this book, "*Allosorus crispus*, the Parsley Fern, is found only on lofty hills." This is a great mistake; the *Allosorus crispus* grows profusely in the neighbourhood of Keswick, and I believe in that of all the English lakes in Cumberland, in the most opposite situations—in wet ditches, by the roadside, and on old tiled roofs. My attention has been for many years directed to this beautiful Fern, and I have tried to cultivate it, in-doors and out of doors, in various situations, soils, and aspects, without permanent success, and I find the same difficulty has been experienced by many cultivators. I obtained a fine specimen from the Lakes last autumn (1855). I kept it in a pot in a cold frame, in peat and loam, with drainage of potsherds half the depth of the pot. In the summer I sunk the pot in a north border, very moist and shady, where it did better, producing its double foliage, but not very freely; it will now be repotted and returned to the frame: it is looking well. Many of the hardy Ferns require winter protection when removed from their native habitats, though they be ever so cold; witness the beautiful and scarce Fern *Aspidium lonchitis*, from the bleak mountains of Scotland.—*F. E., Durham County.*

HARDY BORDER PLANTS.—There can be no doubt that the mass system of grouping the flower beds, in summer, so full of tender exotics, has lost entirely to cultivation many old and valuable perennial and biennial border flowers. This is to be regretted, for many are extremely handsome. It is problematical whether the rage for new plants does not cause many of us to lose sight of old and tried favourites. The mass system cannot well be dispensed with where brilliant display is aimed at; neither is it desirable to do so. The two are perfectly distinct in character, and should be kept so in planting. Borders should be especially allotted for the growth of biennial and perennial flowers, when, by a proper selection and judicious planting of kinds, it need not be without blossom from the first spring flowers till frost. A few annuals sown amongst them would assist in giving brilliancy. To look effective, in planting, regard should be had as to the height each sort grows to; the tallest being placed farthest from the spectator, gradually diminishing to the tiny plant at the edge. Care should also be taken to distribute the striking and showy colours evenly over the whole space. The following five belong to the same genus as the Carnation, and are all well worth a place in every garden. The three first-named are biennial, flowering only once, after which they die off, and require to be raised from seed each year. The two last, Sweet William and Deptford Pink, are readily increased by division of the roots after flowering, or early in the spring, and by cuttings, and seed likewise. Seeds sown in May or June will get good established plants by winter, and flower finely the following summer. The different species of this family readily impregnate with each other, from which have sprung many interesting hybrids. Ordinary garden soil will grow them; if light and somewhat sandy, so much the better. *Dianthus hispanicus* (Spanish Pink), height one foot, flowers deep red; July and August. *Dianthus pulchellus* (Pretty Pink), height one foot, flowers lilac; June to August. *Dianthus chinensis* (Indian Pink), height one foot, of various coloured flowers, many varieties, single and double. *Dianthus armeria* (Deptford Pink), height one foot, red or white flowers; June and July. *Dianthus barbatus* (Sweet William), height one foot, flowers of various colours; June to August. There is some chance of this fine old favourite ranking ultimately as a florist's flower; it is very susceptible of improvement, and already numbers many beautifully marked and coloured flowers, both of single and double varieties.—*E. S.*

OROBANCHE.—The *Orobanche Hederæ* grows abundantly in the neighbourhood of Dublin on Ivy, as the specific name implies. After the stems of the present year's plants decay, in the months of September or October, by searching among the Ivy roots, some will be found swollen, and others with the young buds of Orobanche developed on them. By cutting off the strongest of these roots, between the plant and developed Orobanche buds, and laying bare the roots of Ivy where it is desired to establish the plant, and tongue-grafting the roots of the two Ivy plants together, that on which the buds are and that on which they are to be established, covering all carefully up, the roots of the two plants will unite during the winter, and the Orobanche be developed in due course the succeeding year. In this way Orobanches and *Lathræa squamaria* have been established at Glasnevin. They have not been raised there directly from seed sown, but sufficient proof has been afforded of their growing by that method.—*P., Dublin.*

LIGUSTICUM MEUM.—Some plants are grown in flower gardens on account of their remarkable foliage, and well they deserve a place; some of our native plants might still be added, where there is room to grow them, if not for their flowers, they would give variety and beauty with their leaves, and when brought from mountainous pastures and planted in rich garden soil, their appearance is so changed that those who knew them in the one place will sometimes not know them in the other. The *Ligusticum meum*, or *Meum athamanticum*, might be introduced on account of its setaceous multifid leaflets; the appearance of the plant is greatly altered when brought from upland pastures and introduced to gardens, and its roots are eaten by many as an aromatic and carminative.—*Peter Mackenzie.*

PROPAGATION OF TROPÆOLUM TRICOLORUM.—The simplest mode of doing this is to take off the weak laterals that are not likely to flower, when about two inches long; if with a heel so much the better. Any time from February till May fill the pot half full of crocks, then with a mixture of peat and sand till within two inches of the top; fill up with silver sand, and water with a fine rose, to settle it. Then dibble in the cuttings all round, within one inch of the rim, leaving about half an inch of the cutting above the sand. Place the pot on a shelf in the front of the greenhouse; keep the sand constantly moist, taking care that the cuttings are always erect. In the course of two months many of them will throw up shoots from under the sand. The pot should then be removed to a shady situation out of doors. When the stems decay, do not disturb the sand, but water sparingly. In October let them be placed in the greenhouse, when all that have made small tubers will grow. It is from these plants that the best cuttings are obtained in the spring. In the following May turn the whole ball out of the pot, in a warm situation in the open ground. After they have finished growth take them up and sift the ball through a fine sieve, carefully picking out the tubers. They are then treated in all respects as the older tubers, and will make fine flowering plants the following spring. If seeds are used, they should be soaked in water twenty-four hours before sowing, and the outer shell carefully removed; under this treatment they will grow much sooner and with greater certainty. They should remain in the seed-pot until after they have formed a tuber. A small stick can be placed against each plant, to which it will climb, and it serves to indicate the place of the tuber when the stem is dead. Many seeds will remain twelve months before vegetating.

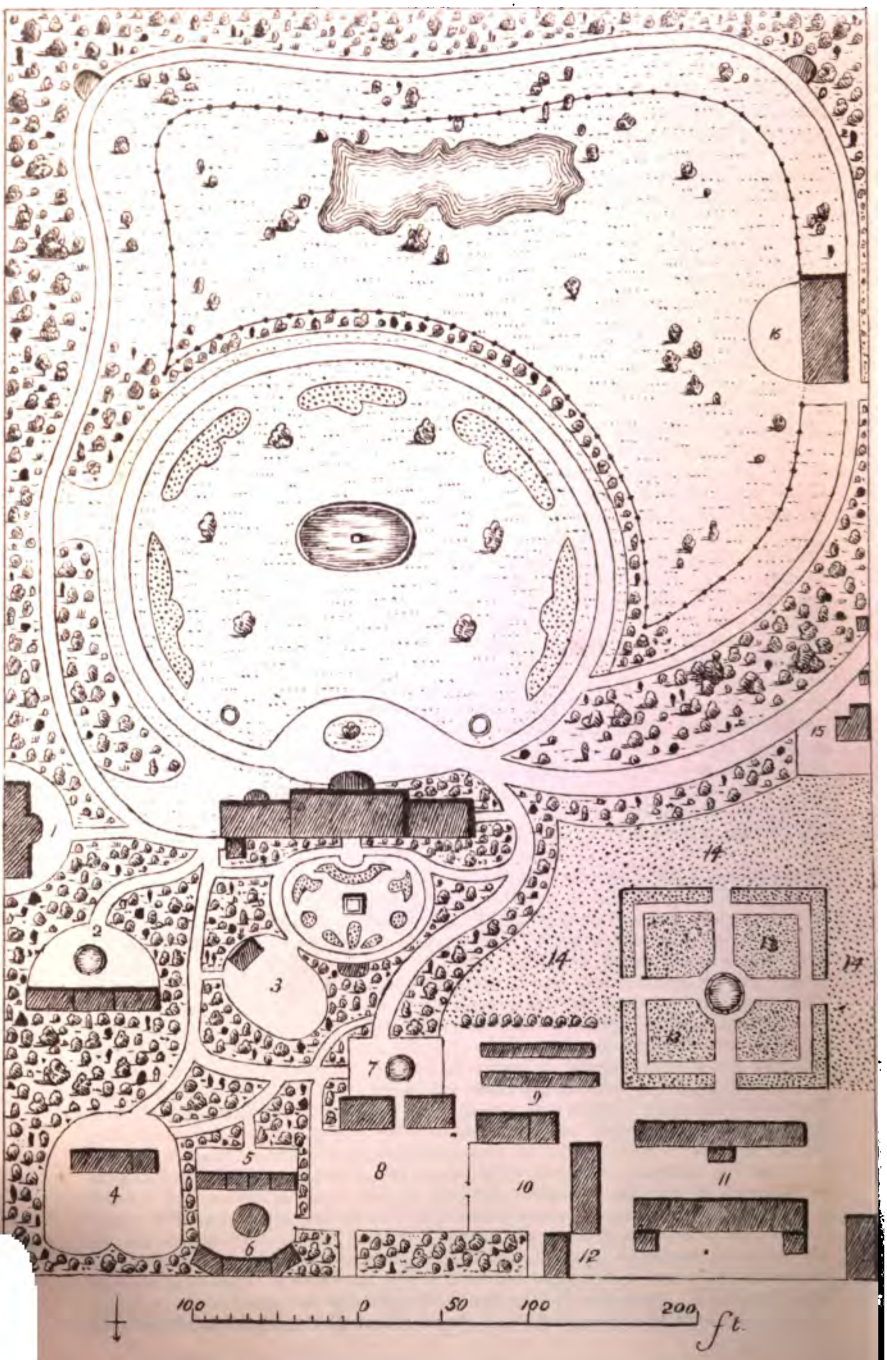
ANEMONE PAVONIA.—This very attractive flower may be planted in patches this month, in a south border, in any light soil. The following are very pretty French varieties. Abide, scarlet-red, yellow centre, stamens black. Achilles, bright carmine, velvety, centre white. Adonis, vermilion-red, centre white. Bajarac, scarlet-red, velvety, centre white. Coronis, fiery carmine, centre white. Damia, violet, centre white. Dedalion, bright vermilion, stamens black. Danäe, carmine-madder. Eolus, carmine, centre white. Fidius, brilliant red, velvety, centre yellow. Plutus, vermilion-red, centre white. The roots should be taken up and dried in the shade, as soon as the leaves die down in May.—*Nemo.*

SUMMER STOCKS.—The first sowing may be made any time in March, to suit circumstances; and when they come up, keep a watchful eye that the first sprung seeds do not damp off. This I take to be a particular point in securing the greatest quantity of double flowers. When the least appearance of damp occurs, they should be immediately transplanted; but if not, the sooner this is performed the better. The following plan I have adopted with success:—I fill a frame with soil, and make small holes all over, about two inches in diameter; I fill these with moss, placing the plants in the centre of each. By the time for planting out, it will be matted with roots, and the ball can be removed to where they are intended to flower, without the plants receiving the least check. This mode is preferable to using small pots, because the roots generally make to the sides of the pots, and when turned out, are more or less injured; besides, it is of some advantage to be able to dispense with pots. No plant is more susceptible of a check in any way than the Stock; and I think it has less chance of receiving it when moss is used than if potted, for there is not the risk of its getting pot-bound, or the roots being injured in turning out. If they are to be well grown, they must receive no check from the time of sowing, until they are placed where they are to flower; and, as before mentioned, particular care should be taken in securing those plants that come up first, for I have proved that they produce the greatest quantity of double flowers. The soil for them should be of medium texture, neither too light nor very heavy, and should be well enriched with dung; in fact, they will bear almost any quantity of rotten hotbed manure. Ten-weeks Stocks sown after the 1st of May never grow and flower fine; they are always stunted.—*G. J.*

THE MYRTLE.—The ancients made great use of this plant in medicine, and they formed a kind of wine from the berries, as well as an oil, which they extracted from the ripe fruit of the Myrtle. The Romans flavoured their wine with the berries, as well as many of their dishes in cookery, before the use of pepper was known to them, and even then it was in high estimation for making sauce to the wild boar. The Italian ladies still consider the tree of Venus to be favourable to beauty, and drop into their bath a water distilled from the leaves, whose fragrance they prefer to the most costly essence of the Eastern nations. The Myrtle is said to have been introduced into England from Spain by Sir Walter Raleigh and Sir Francis Carew, in 1585, when they resided in Spain and discovered the preparations making for the Spanish Armada. Miller tells us, in the first edition of his Dictionary, printed in 1724, that "at Sir Nicholas Carew's, at Beddington, in Surrey, is a Myrtle of the Spanish broad-leaved kind, which is above eighteen feet high, and spreads above forty-five feet." If this were the original tree, it would then be one hundred and fifty-six years old, and most probably perished with the original orange-trees that were killed by the severe winter of 1739-40.

THE PÆONY.—For the information of persons beginning to form a small collection, I beg to notice a few sorts well worth growing. Barterii, single, glossy, crimson, beautiful bright yellow centre, and finely cupped. Foliosa, light crimson, fine foliage, very fine. Lobata, neatly shaped, pink, single. Officinalis carnescens, splendid crimson, rich centre, single, very fine. Pallida, elegant shape, deep and broad flower, of a very delicately shaded pink colour; quite a gem, and should be in every garden. Officinalis albicans, after the same style as the preceding, "alike, but different," not quite so large a flower. Albiflora chinensis, is perhaps one of the very best yet in general culture; its fine foliage, neat habit, and pure white flowers render it an object of universal admiration to all who have seen it; the latter measuring from seven to eight inches in diameter. Humeii, fragrans, and odoratissima are finely shaped, the two latter finely scented, and the three are indispensable to collections, if only of moderate pretensions. The colour is variously shaded, rosy, and lilac. Potsii and Rhevesii are well worth growing; the flowers of the former are neat, and of a pretty light pinkish colour; the latter is of a rich crimson.—*W. B. T.*

CULTIVATION OF MESEMBRYANTHEMUMS.—In the spring of 1854, I planted out as many plants as filled three lights, putting nine or ten under each light, of different sorts, such as inclandens, aurantium, perfoliatum, deltoides, barbatum, and other species of different habits; the strong-growing kinds were put towards the back, and the dwarf ones in the front. They soon grew very vigorously, and flowered exceedingly well, having a very different appearance from that they exhibit when confined to small pots; many of them continued in blossom all winter, and until the spring, when I gave them a good thinning, for they were spreading over each other, and mixing together. At that time I planted the remainder of the pit, which is forty feet long and four feet wide in the clear; I also covered the surface with stones of different sorts, which were laid irregularly so as to resemble rockwork; the stones had the effect of keeping the branches from the soil, which might otherwise decay them. In winter the whole must be covered with lights, and occasionally with mats, as pits in front of houses usually are, but these are not necessary in summer, as the plants must be fully exposed to the free air, the same as hardy greenhouse plants, and require little more than thinning and plenty of water. Pits in front of stoves must be preferred, as the warmth from the front wall in winter will repel damps, and with a little covering above the glass, will sufficiently keep out the severest frost. I was induced to attempt the above mode from observing that Ice-plants grow to perfection on small hillocks of rich mould, supported by stones put together in imitation of rockwork, two or three feet high, with a base of about four feet diameter; these banks look well when the plants cover them entirely. I have cultivated Ice-plants in this manner with success, every year since I have been here.—*K., Hull.*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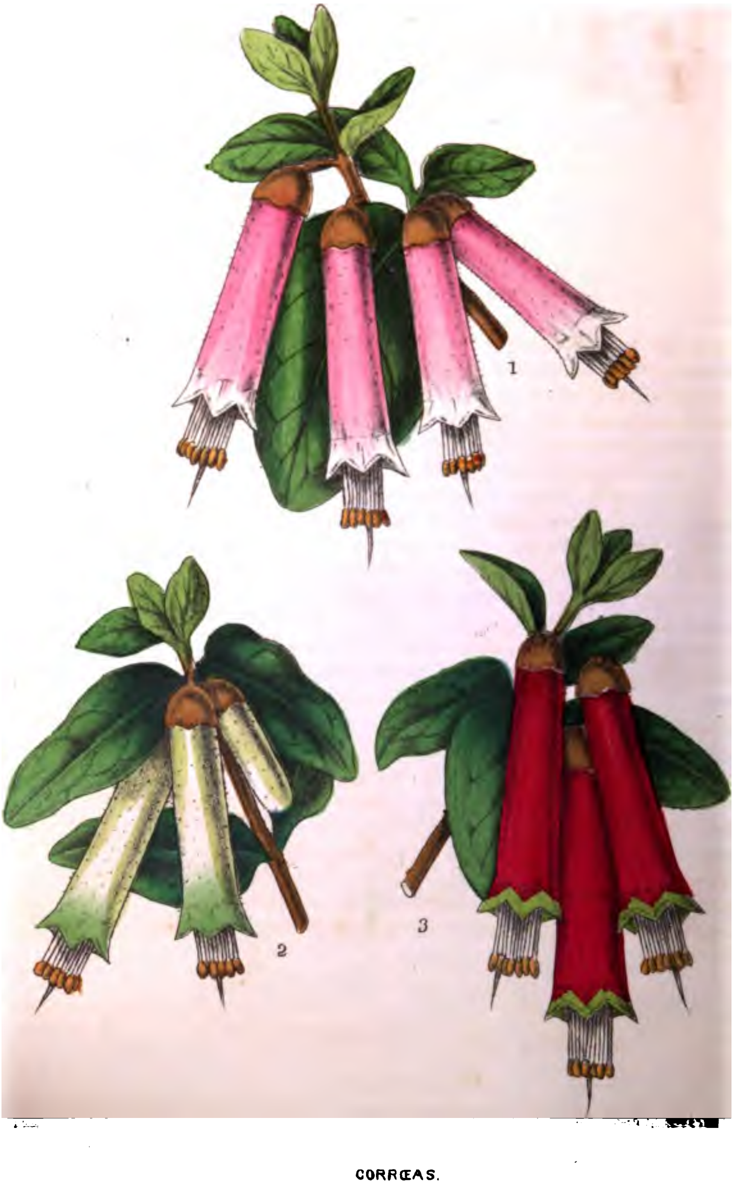

CORRŒAS.

The Floricultural Cabinet.

DECEMBER, 1856.

ILLUSTRATIONS.

HYBRID CORRÆAS.

There are few plants which can surpass Corræas as attractive winter-blooming inhabitants of the greenhouse, whether we take into account the amazing profusion of flowers they produce, or the extension of their blooming season throughout the dreariest months of the year. Their management is easy, merely requiring the protection afforded by a cool airy greenhouse, to be potted in a mixture of heath-mould and light sandy loam; the pots must be supplied with plenty of drainage, and care taken that but a moderate supply of water is afforded them in winter. The genus is exclusively Australian. All strike freely, except perhaps *Corræa speciosa*. Cuttings should be taken off the ripened wood, in autumn, struck in silver sand, and allowed to stand till spring in a cool pit, where they should be placed upon a gentle bottom heat; they will soon strike root and may be potted off into small pots, and hardened off to stand in the greenhouse. As they grow rather slowly, grafting and inarching are sometimes resorted to, and with advantage; for this purpose *C. alba* makes a good stock—the proper time for the operation being when the plants show signs of growth, in spring.

The subjects of the present month's plate are hybrid varieties, raised by Mr Gaines, a gentleman who has devoted considerable attention to the multiplication and improvement of hybrid varieties of this attractive genus. No. 1, *Rosea alba;* No. 2, *Viridiflora alba;* No. 3, *Brilliant*. All are well deserving a place in the greenhouse, especially the latter, which is one of the finest Corræas at present in cultivation.

LISIANTHUS RUSSELLIANUS.

BY R. T. W. T.

This very fine plant, introduced from Texas several years since, is still uncultivable to many gardeners, as inquiries received from time to time show, yet as we occasionally see some finely grown and bloomed specimens at the Horticultural Exhibitions, this fact is a proof that its proper management is not even yet sufficiently known. The following is a brief abstract of the treatment successfully adopted by an eminent cultivator, and which I have myself pursued. The best time to sow the seed is the middle of March, and as the grains are very small, this operation should be conducted with particular care, and the following compost used, one-half loam, and one-half leaf-mould, with a little sand; place plenty of crocks for drainage in the bottom of a forty-eight-sized pot, and fill up with compost very tight, and on the top place a layer of sand half an inch deep, then damp it; sow the seed rather thinly, sprinkling a little dry sand on the top, and cover with a piece of flat glass. Place the pot in a heat of 70°, or thereabouts, with a pan under it for future supply of water, as this ought never to be applied to the seedlings over the top, and the pan must not be allowed to become dry at any time. In about three weeks the young plants will make their appearance, and in the course of another period of like extent let them be potted off singly in sixties, in the above compost, and with plenty of drainage to carry off the water freely. Set them again in a warm frame, and after this let them be liberally watered over head, and if kept in a good growing heat, they will be nice little bushy plants by the autumn. Top them at every joint, and in September shift them into large sixties, to keep the roots in an intermediate state during winter; after this all top watering must be withheld, and that necessary element applied by a pan under the pots, as before directed; for, as winter approaches, not a drop of water should be allowed to fall on the plants. I have even kept the plants well in a warm greenhouse, although the best place for them at this time is a dung-pit, heated to 50°; air should be admitted front and back, to prevent the settlement of damp. Water them only sufficiently to keep them from flagging; if dry weather, once a fortnight, but if damp, once a month will be sufficient. Increase the heat to 70° or 75° towards the end of February, and when they begin to make fresh growth, shift them into pots of as large a size as is convenient, for on this depends the fineness of the specimen. As the spring advances it is almost impossible to afford them too much heat and moisture. Liquid manure developes them very energetically. By this plan they will bloom in July, and continue so for two or three months. I have seen a plant produce near five hundred of its pretty and attractive flowers.

ON GROWING THE RONDELETIA AS A SPECIMEN PLANT.

BY G. SMITH.

In its natural state of growth, and without artificial assistance, there are many attractions possessed by the Rondeletia; in a collection of handsome stove plants this is one which is sure to draw attention, especially *R. speciosa* and *R. speciosa major*, the brilliant trusses of the rich orange-scarlet coloured flowers of the latter making a striking display. A consideration is also due to the ease with which it may be made to blossom at almost any season, through a suspension of the system of "stopping," and to the fact that, although its natural habit is loose and straggling, it may readily be trained to a nice bushy specimen plant. My system of treatment is based on natural principles and a consideration of the climatic conditions of the locality where the *Rondeletia speciosa* flourishes in its native soil, which is the island of Cuba, where the temperature averages about 75° Fahrenheit, and where during the period of its growth the air is charged with a considerable amount of heat and moisture. I treat the young plants thus:—In spring, when they are rooted, and ready to transfer from the cutting-pot, I place them in a mixture of one-third turfy loam and two-thirds peat soil, adding a little silver sand, and using three-inch pots; they should then be placed in a span-roofed pit, stopped at the third joint from the base of the shoots, and plunged in a warm medium over a hot-water tank, that root action may be excited, and an imitation of the terrestrial temperature in the tropics, which exceeds very much that of the atmosphere, may be produced. The temperature of the plunging medium may be 80° Fahrenheit, and the atmospherical from 70° to 85°, varying the amount according to the degree of solar heat, with a nocturnal temperature of 60° to 65°. As the incipient buds break, and the young shoots become developed, a portion of air should be admitted, to induce them to assume a robust habit of growth. Syringings should be given them morning and evening, and the pit closed early in the afternoon, to keep up a warm humid atmospheric medium around the plants. After the pots are filled with roots, and before becoming cramped, they may be potted into five-inch pots, in the following materials intimately blended: one-third turfy loam from an old pasture, the turf in a partial state of decomposition, one-third fibrous peat, and one-third good rotten dung, with a portion of charcoal in small pieces, and silver sand, with plenty of drainage. They should then be replaced in the pit and partially plunged. When the shoots have attained four inches in length, they may have the points pinched out, and this system of stopping should be repeated till the plants are of the required size—that is, say five or six times, never allowing the shoots to grow above four inches betwixt the periods at which such operation is performed. If the plants are required to bloom in the spring, stopping may be discontinued at the termination of the second autumn. After the second potting, as the plants increase in size, they should be repotted when they require it, using the materials in a coarser state than before, to secure the requisite degree of porosity in the soil, and to make it permeable to air and water, which is of the utmost importance. They must be kept growing under precisely the same conditions as heretofore, excepting that more air be given as the plants increase in size; and weak liquid manure, in a highly clarified condition, may be supplied once a fortnight to the plants, which will accelerate their growth very much. As autumn approaches, the plants may be removed to where there is a drier atmosphere—a span-roofed stove for instance—less humidity kept up, and the supply of water reduced, with a gradual reduction of temperature, till it recedes to from 60° to 70° by day, and 55° to 60° night. This will be found sufficiently high during the season of comparative repose, till the vivifying influences of the great source of light, heat, and vitality arouse the vital functions to renewed activity, when the treatment before described may be again resorted to, potting the plants as they require it. When the plants have undergone their last stopping, a reversal of these conditions is necessary; the plants may be allowed to become cramped at the roots, the humidity both of the soil and atmosphere should be reduced, and waterings of liquid manure discontinued, till all the flower-buds are distinctly visible, when they may be renewed in a copious manner. Under this treatment the Rondeletia will be found to bloom in perfection, and will have made beautiful plants by due attention, amply compensating the grower for his labour, and affording, by its handsome and scented blossoms, a treat to all who delight in beholding a beautiful flower.

ON PREPARING THE CHRYSANTHEMUM FOR EXHIBITION.

BY A PRACTICAL GARDENER.

Much attention having been devoted to this favourite flower of late years, and so many excellent varieties being annually exhibited, lead me to forward the outlines of management for preparing specimens, to which end my efforts have been successfully directed for some considerable period. I must premise that the cultivation of Chrysanthemums for single blooms is totally different from the management required when the beauty of the plant is the object. By taking off the tops of the plants in July, and striking them with slight bottom heat, they will be ready for potting into five-inch pots in August, and they may stand out of doors until September, when they should be repotted into the next size in rich compost formed of half good loam from rotted turf, one-fourth dung from a melon bed, and one-fourth decayed leaves. This is to be well mixed, and laid together a few days. In potting from one size to the other let the ball be undisturbed; and let them be watered and have all the air they can in mild weather. They will grow rapidly, but this is no object when the flower is to be cut. Let them stand near the light, and have plenty of room and no touch of frost. By no means attempt to hasten or retard them, let the bloom have its natural growth; and if there is reason to fear they will be too forward, keep half the stock on the shady side of the house, or temporarily shade them. But as, in a collection, there will be but little danger of missing the season with some, or rather with all, it is better to let them all go on their own way, for a bloom once checked will never open freely, and a variety naturally good may be easily spoiled by sudden changes of heat and cold. It is almost better to miss altogether with a particular variety, than to attempt to advance or retard it.

When the buds show, be on the look-out for the side ones, that they may be taken off at an early stage, and the whole strength thrown into the single flower. In this way they may be flowered thrice the size that the blooms would come in the ordinary way. The most that should be attempted is to shade the flowers from any very hot sun that may occur in October and November; and above all things, even when giving air, see that there be no wind or draught playing upon them, for wind is worse than sun to an open flower. Those which are to be shown as plants, should be either dwarfed for small pots, or stopped and grown the whole season pretty sharply for larger specimens. Beginning with the cuttings, which should be provided early in the year, while they are in small pots and with four pair of leaves, pinch out the heart and let the laterals grow three inches long, when they may be pinched also; and as they advance there will be plenty of side shoots to form a good bush. They may, during the first two months of the year, be in cold frames, covered against violent frosts, but having all the air in mild weather. If the plants are bushy enough, let them be potted into six-inch pots, in the compost already mentioned, and as soon as they have begun to grow fast, top some of the most vigorous shoots. In fact, begin by these means to get your plants into good order and form. In May, change them to larger sized pots—eight or nine inch ones—and let them stand in an open situation, with the benefit of all the sun, but plunged into some dry medium up to the rim of the pots, to prevent the sun from burning the sides of the pots and damaging the fibres. They need not be taken up till the beginning of October, when they may be removed into a house by themselves, or in any place where they will be kept in a strong light and be protected from winds and frosts. If the pots are pretty full of fibres they may want another shift, but if not very full, they may be bloomed in their present pots. If they are confined and cannot be removed into others, give them at every fourth watering liquid manure, such as would be made by putting a good shovelful of thoroughly decomposed dung into eighteen gallons of water, and well stirring them together for two or three days. This will be as good as repotting. Regulate the number of blooms so as not to have them crowded; and, above all things, take especial care that they are not at any time distressed for water during the whole period of their growth, for the certain result of this would be discoloration of the leaf, or its falling off altogether.

The plant will require supports, which should be neatly put to them, so that the foliage may conceal them. The plants to show dwarf should not be detached from the tops of plants until they have made the best part of their growth in July; when they have struck well, pot them into five-inch pots, plunge them in the most open situation where they have all the sun, and take off the tops down to about three pair of eyes; this will cause them to be neat and bushy, and the open situation will prevent them from running up high. They may be continued on the spot till the beginning of September, when they may be shifted into six-inch pots, using the rich soil before recommended. Still keep them plunged, but allow no frost to touch them. Remove them to the house in October, and let them have air and moisture, with plenty of light, and the pains taken with them will be fully repaid at the blooming season.

ON THE MANAGEMENT OF HERBACEOUS CALCEOLARIAS.

BY FLORISTA.

NOTWITHSTANDING the difficulty which is often met with in wintering these plants, I am assured, from the results of long experience in the culture of these lovely gems of Flora's kingdom, that all who strictly conform to my plan of management need fear no failure, which I will briefly detail. If we commence when they are past bloom, which is generally about the end of June, we should, as soon as circumstances will permit, divest them of their flower-stalks and dead leaves, and top-dress them about an inch deep with silver sand and yellow loam in equal portions, taking care that all the ripe joints of the young shoots are covered for about half that depth; afterwards place them in a cool shady situation until the beginning or middle of September, giving occasional waterings during that period. By this time it will generally be found that most of the shoots so covered have emitted a sufficient number of roots to admit of their being removed with safety from the parent plant; this operation I perform in the same manner as is generally done by gardeners in the removing of layers of Carnations. I then plant them in five-inch pots, or smaller if necessary, and place them in a frame on a gentle bottom heat of tan, taking care at this period to guard against the direct influence of the sun until they are fairly established in their pots. The compost I use for the first potting is, three parts of yellow loam, four of well-decomposed leaf-mould, one of cow-dung, which has lain at least twelve months, and two of silver sand. This soil I vary as the plants strengthen and approach their flowering season, until the proportions are five of loam, two of leaf-mould, two of cow-dung, and one of silver sand. From the time the plants are well established in their pots I give them no particular attention beyond that of slightly fumigating them once a week, a routine to which I subject them during their whole period of growth, until about the beginning of

January, when I shift them into larger pots and place them on the front stage of a Geranium-house, the temperature of which is kept at forty-five degrees, with an exceedingly humid atmosphere. I ought to observe that in shifting I always sink the ball a little, to admit of a top-dressing of fresh mould being put over the ripe joints of the young wood, which very soon emit roots, an operation which tends materially to increase the size and strength of the plants. I am also very particular as to drainage, never allowing a particle of the old drainage to be removed; and by the time they are placed in their flowering pots, I have a complete open drain from within a few inches of the surface down to the bottom of the pot, with the exception of the layers of fresh turf, which I always introduce between the mould and potsherds. This temperature and a careful attention to fumigation I consider the most essential points in the cultivation of Calceolarias of this class; for if they once become infested with green fly, no art can prevent the disfigurement of their foliage, and few plants are more impatient of an excess of moisture at their roots than herbaceous Calceolarias. It should be observed, however, that in fumigating, care must be taken to avoid doing so in excess; for if smoke is applied to them in the same quantity as would be proper for plants of a hardier nature, they will be certain to suffer from its effects. In watering, I am guided more by the appearance of their foliage than by the mould in the pots; if they are in a proper state, their foliage will be found every morning to be fringed with drops of dew, which is a certain indication of health. When this has not been the case, I have always found that my plants were either too wet or too dry. By using the above compost, attending to temperature and atmospheric moisture, avoiding an excess of water at their roots, and slightly fumigating once a week, I have grown many of the beautiful, but now old-fashioned, varieties to the size of between two and three feet in diameter in the head of flowers. But this cannot be effected unless the remarks here offered are carried out to the letter, and which contain all that need be practised in the successful treatment of this most engaging class of plants.

ON THE FORMATION OF WALKS.

BY A PRACTICAL LANDSCAPE GARDENER.

A LARGE amount of the pleasure and gratification afforded by a garden necessarily depends on the manner in which its walks are constructed. Walks which are so ill made or of such improper materials as to become cloggy and tenacious during and soon after wet weather or a thaw, and those which have a coarse harsh surface, through very loose materials, tend much to deter persons, especially ladies, from making so frequent use of their gardens as a pleasure and relaxation as otherwise would be the case, and in consequence deprive them of a great deal of rational enjoyment and healthy exercise. The standard for good walks and drives is one that is dry, hard, and firm in all kinds of weather, and kept constantly smooth and even; the more closely this standard is approached, the greater will be the comfort and ease of the proprietor and his friends. The first-named requisite, dryness, is attainable by using suitable materials not only for the surface, but also for the foundation; by giving the walk a gentle but gradual slope in some direction, so that it may have a decided fall or inclination in the direction of its length, as well as a slight rise in its centre throughout its whole extent; and lastly, by the placing of suitable drains, to carry off the water at the lowest and intermediate points. In the ground formation of a walk, the first consideration should be to obtain a firm bottom, which should be pared as smoothly as possible, keeping it from three to six inches higher towards the centre, the height being governed by the width of the walk. On both sides let the ground be sloped down gradually, for the extent of about eighteen inches, to the extreme margins, where it should be from six to nine inches deeper than in any other part. These are for filling with a coarser material than the walk itself, and serve as drainage; they should communicate at intervals with the ordinary ground drains, so that any water accumulating may be speedily let off: this is an essential plan in securing a dry walk. At intervals, where the walk is deepest, and where it would appear likely for water to collect, square holes should be cut, lined at the sides with slates, and covered with grates; these should communicate, by means of short rubble drains, with the nearest common drains, but at such a height as to receive the overflow of water merely, the sand and fine gravel which will in time accumulate at the bottom of the hole being removed from time to time. A walk should have at least nine inches of material upon it, and a drive twelve or fifteen inches; fine gravel for the surface need not be laid on deeper than three inches, the rest being either gravel of a coarser kind, or flint, rubble-stone, etc. Walks of three feet width may be raised two inches in the centre when filled, giving an additional inch of elevation for every yard in breadth up to a certain extent; but very broad straight walks present a better appearance if formed perfectly flat from side to side, which flatness adds much to the effect, especially where the grass is kept low and neat. That most extensively employed material, gravel, is very variable in different parts of this country, and not unfrequently requires some artificial preparation or admixture, before it is brought to a proper state for use. Some, which contains clay and lime, though of good binding quality, is liable to the objection of being sticky in wet weather, and to considerable breaking up during frost; here the addition of some sandy and drier kind is desirable. Again, sea gravel will not bind at all without a slight mixture of a limy kind, or of pulverized clay, or even strong loamy soil in a small proportion, as a fifth or sixth part. When settled down and quite set, a walk of this material forms one of the best possible surfaces. The perfection of a good walk consists in its smoothness, and freedom from rough stones, therefore a thinly spread upper stratum or coating of gravel finely screened or sifted should be laid on, or the whole of the surface must be finely raked, so that no stones of large size are left to be kicked up in dry weather. If gravel be scarce, road scrapings, if tolerably free from dirt, and thinly laid on, make a good surface material. The best coloured gravel, where choice may be exercised, is the deep orange-yellow kind, so abundant in the London district—this has considerable richness and warmth of appearance; whitish and lighter-tinted gravels have too conspicuous and cold an air to make their adoption desirable when any other is to be had. Nothing makes a walk look more slovenly and untidy than rough or deep edges; it is of importance therefore to have all grass verges kept low, neatly clipped, and smooth throughout, which at once indicate a refined taste in the manager of a garden.

The period at which walks should be laid down is summer and autumn, which are the best seasons for any kind of new ground work, as the earth is then dry and can be easily moved, as well as has time to settle. I would, in consideration of these and other advantages which my experience has led me to observe, strongly advise benefit to be taken of fine weather towards the close of summer and early autumn, for the performance of all operations necessary in the formation of garden walks; the whole of August and September being in the main the best time, and the period of which, in my practice, I always avail myself for this kind of work.

ON FLOWERING HYACINTHS FOR EXHIBITION.

BY THOMAS SELLERS, BATH.

I SEND the following remarks on the method I have successfully adopted for blooming the Hyacinth in the spring months, which, if you think worthy of a place in your useful publication, you are at liberty to insert. In the first place, it it important that a proper selection be made in the choice of bulbs, which ought to indicate great strength; for as the best sorts sometimes make poor flowers, such only should be chosen as show the greatest substance. The soil which I make use of consists of good free loam and well-rotted cow-dung, with a small portion of sand; yet I would remark that this is not of great importance, as the matter to be developed is the secretion of the previous season, and therefore only requires to be placed in favourable circumstances to forward its proper development. The bulbs being planted in thirty-two-sized pots, I place them in a cold pit or frame, with a dry flooring, and cover the whole over with dry sawdust, at least six inches deep, above the pots. This material being kept perfectly dry, the bulbs are secure from frost, and likewise from premature excitement. When spring arrives and the leaves begin to push, I raise the pots above the sawdust, to prevent that blanched appearance which this tribe often presents when brought from the old tan-heap, which is but too often their abode until wanted for forcing. As soon as the plants begin to grow I expose them as much as possible, merely protecting them from frost and rain. When nearly in flower I remove them to a shaded place, and fix over them hand-lights, elevated upon inverted flower-pots under the corners, for the twofold purpose of making room for the tops and giving them all the air possible. When the day is fine and calm, remove the top of the light entirely. In such a situation they will develope themselves in their greatest perfection, and may be preserved in full beauty for double the time which they would be if exposed to the sun.

THE BULB GARDEN.

BY CLERICUS.

There are few classes of plants which are so useful for spring decoration as the bulbous, which affords a gay display during the early months of the year, then dying down, to be succeeded by tender annuals and bedding plants, without which the summer and autumnal attraction of the parterre would not be complete. Of all bulbs which are suited for an edging to flower beds or borders there are none which can compare to the Crocus, and where the plan is of a geometrical or regular character, a good effect is produced by a skilful combination of colours, made by judiciously planting the various kinds of Crocus along the sides of the beds, or in continuous lines. A selection of the best kinds should comprise the following: *Crocus vernus*, blue; Cloth of Gold, yellow; Scotch, striped, this is one of the earliest; Bride of Abydos, white; Ne plus ultra, blue and white; Prince Albert, purple; Queen Victoria, white, very pure; and Othello, very dark.

Snowdrops, too, should be extensively planted, but are better grown in patches, distributed along the sides of shady walks, or snugly ensconced in rockwork, where they are always found to grow very fine and attain a large size. A similar bulb, the *Leucojum vernum*, or Snowflake, is also well adapted for patches in open beds; it is of taller habit, and produces larger flowers than the Snowdrop, and deserves to be grown by every lover of the tribe. Those who order this bulb should be careful to secure the true one, as *L. æstivum* is generally sold under that name, whereas the true *vernum* is a far more interesting plant, flowering earlier, and bearing blossoms of double the size.

Many of the varieties of Alstræmeria are very hardy, and if planted in a dry loose soil, continue to flower for years without requiring farther care. The handsomest varieties are *aurantiaca*, *linearifolia*, *plantaginea*, and *psittacina*. As auxiliaries to the foregoing the Narcissus tribe is valuable, being plants of the most easy culture, requiring transplanting but every third year; I have often been puzzled to understand why they are not much more extensively grown, certainly not because they are too common, the best varieties being unfortunately scarce. The value of Narcissus flowers for in-door decoration in early spring should not be overlooked. Although more than sixty species are known, the choicest are *Narcissus biflorus*, the two-flowered, yellow and white; *N. bulbocodium*, the hooped-petticoat Narcissus; *N. poeticus*, white; *N. Jonquillus*, the Jonquil; and *N. Tazetta*, the Polyanthus Narcissus, a very elegant species, the stalks being many-flowered; of this there are numerous hybrids, the most select are *Bouquet sans Pareil*, *Couronne Blanche*, *Grand Monarque*, *La Belle Normande*, and *Soleil d'Or*. The above comprises a small but excellent selection, all well worth growing. Those who make a practice of purchasing annually Dutch-grown roots for blooming in pots or glasses, should take particular care of the roots after flowering, and early in October plant them out in the border, and they will bloom in great perfection. For small beds I would recommend the rare and beautiful Scillas: *Sibirica*, blue; *bifolia*, lilac; *bifolia alba*, pure white; *carnea*, pink; *præcox*, dark blue; and *Italica*, pale blue. They all succeed well in a light soil, and multiply rapidly by means of offsets; their culture is very simple, for they merely require planting in the autumn, the bulbs being placed from two to four inches under ground, according to their size, and they may then remain year after year, the patches of bulbs increasing in size, until it is required to form new plantations; except for this purpose, or for the sake of increase, the less they are disturbed the better.

The Babianas are a very pretty genus of hardy dwarf-growing bulbs, of different shades of blue, red, and yellow, which flower abundantly during the months of June and July; they are very attractive, showy, and generally admired. The selection should include *atrosanguinea*, *cærulea nana*, *Kermesina*, *rubra cyanea*, and *tubiflora*. Fritillarias are of easy cultivation, and singularly pretty, as are the chequered kinds, *meleagris* and its varieties; yet *Fritillaria imperialis* has an imposing and majestic appearance—there are four varieties, *imperialis flava*, the yellow Crown Imperial Lily; *imperialis foliis variegatis*, with variegated leaves; *multiplex*, Crown on Crown Lily; and *rubra*, the red variety. They are perfectly hardy, and will grow in anything but stiff clay; they should be planted in October. Of Gladioli there are many beautiful kinds, both species and hybrid varieties, and no bulb garden should be without a number of these plants. The season of flowering depends much on the time of planting, some blooming in the early part of summer, and others, such as the tall-growing varieties of *psittacinus*, *floribundus*, and *Gandavensis*, later in the autumn. A light rich loam, with good drainage, suits them well. The varieties being so numerous, and all good, it is unnecessary to offer a selection. Ixias are a handsome genus, which have unaccountably been much neglected in this country, as the slight protection which they require in winter is easily afforded them. The following are the choicest, many of them new, and all have been proved in my own garden. *Maculata suprema*, a large and free bloomer, buff, with a large crimson centre and tips; *Cuprea capitata*, a large trusser and free-flowering dwarf variety, bright copper colour, with a dark centre; *Lilacina*, an early kind, lilac, with dark centre; *Flexuosa*, late blooming, pale lavender; *Conica*, brilliant orange; *Ochroleuca*, sulphur, with dark centre—this is one of the largest flowering of the genus; *Purpurea campanulata*, a large, handsome, purple flower; *Rosea maculata*, delicate rose, with dark centre; *Sulphurea maculata*, bright yellow, with a very dark centre, a large flower, and very dwarf in habit; *Erecta*, pure white; *Viridiflora*, pretty pea-green flowers, with a black centre, late, but showy; *Sanguinea*, deep yellow, with scarlet centre. Sparaxises also should be grown as associates to the Ixias, which they exceed in brilliancy and variety of colouring; the annexed are deserving of cultivation, but they are all liable to change in colour: *Cærulea*, slate coloured; *Nigricans*, intense purple, approaching to black; *Pavonia*, white; *Tricolor*, scarlet and black; *Alba*, white; *Bulbifera*, yellow; *Rosea*, bright rose; and *Variabilis*, changeable: all having a yellow centre. All who have seen a good selection with the sun on the bed must be impressed with the beauty of the sight, and brilliance of tints. Early Tulips, both double and single, will not be overlooked by all establishing a collection of bulbs. There are also several choice and desirable bulbs in the genus Muscaria, of which the best are *botryoides*, *alba*, *comosum*, *moschatum*, *macrocarpum*, and *pallida*. Liliums, in pots or vases, and in the open border, along the outside of a bulb garden, are a great source of attraction; I would recommend the following especially, *Lancifolium album* and *rubrum*, together with the white, yellow, scarlet, and purple Martagons. For a bed in the centre, few things make a better show than two or three plants of Tritomas, both *media* and *uvaria;* their large, brilliant, dense spikes of flowers concentrating the eye towards the centre. To the foregoing I may add briefly several miscellaneous bulbs not frequently grown, but of much beauty and merit, as *Allium acuminatum*, *acutum*, *Moly*, *nigrum*, *roseum*, and *stellatum*—the first variety is extremely neat in appearance and of showy colours; *Camassia esculenta*, another very handsome plant, which succeeds best in peat soil and shaded situations, blooming in June; *Ornithogalum bulbiferum*, *montanum*, *nutans*, *refractum*, and *umbellatum*, *Anthericum liliastrum* and *sulphureum:* all are very hardy and early-flowering varieties. *Pancratium maritimum* is a fine bulb, which no collection should be without; *Anomotheca cruenta*, a pretty dwarf; *Brodiæa congesta*, growing two feet high, and bearing a coronet of blue flowers; *Watsonia fulgida*, bright orange-scarlet, no garden should be without this hardy bulb; *Zephyranthus candida*, or "flower of the west wind," which I have proved to be perfectly hardy, however delicate several of its brethren have proved. In concluding this brief but select list, I must not omit to recommend a choice collection of Hyacinths, of various colours, which will afford a grand display up to the month of June, when they,

together with most bulbous plants, give place to other but not more attractive flowers.

THE CONSERVATORY.

BY A NOBLEMAN'S FLOWER GARDENER.

The principal point wherein a conservatory differs from a greenhouse is that the former is better adapted for the growth of large specimens than the latter; in the first they are generally planted out in beds, already prepared for their reception, or in large tubs and boxes, whilst in the latter erection they are kept in pots, and mostly placed on stages. The general end of the conservatory is a building to contain large and fine specimens; but in the greenhouse the plants are usually kept pretty small and, by frequent propagation, young. The most appropriate situation for a conservatory is either in the flower garden, where it ought always to be a detached structure, or adjoining the mansion, to which it may form a wing.

In erecting a building of this kind, the great object to be kept in view is the admission of abundance of air and light. For the former purpose all the sashes should be made moveable, in order that the roof and sides may be taken away at pleasure, whenever necessary, and as regards the latter, all such conservatories as have walls at the back and ends are highly objectionable; neither do I approve of such erections being very lofty, for, were expense no consideration, the plants are liable to become drawn up, presenting too frequently slender naked stems, and if exotics are well cultivated in houses not exceeding twenty or twenty-five feet in height, all that is reasonably expected from them may be obtained. Most small conservatories have the floors paved, and the plants are arranged in large pots and boxes, which, for such a class of houses, are the best; for when the plants are grown in beds they soon become too large, and grow coarsely; often the most worthless grow up rapidly, and destroy the more rare and valuable, which frequently are of more slender habit. Conservatory plants cultivated in beds not only grow too luxuriantly, after a few years requiring to be reduced in size by close pruning in, or removed altogether, but most do not flower so well as they would do in large pots; neither can they be removed so readily in case of disease, or at those periods when they are out of flower, or set in the open air out of doors during summer. I admit that boxes, tubs, or vases, etc., if ever so ornamental, will be objectionable if in too great a number or of too large a size. To remedy this objection, the floor may, however, be made hollow, and covered with an ornamental or neat iron grating, instead of a solid pavement, and constructed of separate pieces, so as to admit of the larger boxes being placed beneath, while the smaller pots and vases are distributed through the house, in a manner calculated to produce the most elegant and pleasing effect.

Where this additional expense, however, is objected to, and it is preferred to plant the specimens in a permanent bed, such parties may perhaps consider the following observations serviceable. Let the whole of the ground-floor of the house be excavated, four feet in depth being a convenient space, and in the centre of the intended bed a drain should be made to carry off the superfluous water; over this drain, as well as over the whole surface of the floor, lay a stratum of rough stones or brickbats to the depth of about a foot, upon which the soil for the plants to grow in should be placed. In preparing the bed, it will be of advantage to place a layer of cut and dried turf, to prevent the fine soil settling down among the drainage below; it should be closely packed, and beaten down. Over this the compost soil is laid, which should have been in a state of preparation several months previously, by being often turned over and mixed, to sweeten as it is termed, and should consist of light yellow loam and peat soil of a sandy nature, which will suit most things, except Orange trees and Camellias. The bed, being filled and moderately trodden down, is ready for the reception of the plants. Where Oranges and Camellias are to be grown, a difference of soil is absolutely necessary; as for the former, it can scarcely be too strong and rich, if sufficiently porous to admit of water passing through it, and for the latter a light and rather rich mellow loam is to be preferred. As to the general management of conservatory plants, the whole may be comprised in a few words. The temperature should never be allowed to fall below 40°, and in general should not much exceed 50°, and all possible air should be admitted, even in winter, if the weather be suitable, and this may be said to be the great secret of growing conservatory plants well. Where the specimens are planted in beds, it is advisable to exercise caution that they neither become too dry at the roots nor the soil soddened by an excess of it. If grown in large pots or boxes, there is less danger of falling into either extreme, and if the evil exist it is much easier rectified; indeed, in the latter case too much dryness may be apprehended, and especially from the use of tubs, where the water generally passes down outside or through chinks, which tends to keep the ball dry, in which case it is better to have tubs and boxes lined halfway down with thin zinc. Frequent watering, by the application of the syringe, is very beneficial, by cleansing the leaves and branches, and during summer should be applied at least twice a week, and in winter, during mild weather, at least once a fortnight. In respect to tropical plants, water can scarcely be applied in this manner too abundantly, but should in their case always be accompanied with a corresponding degree of heat. For the proper distribution of water over the foliage of conservatory plants it is necessary to provide a small water-engine; those on Read's principle being best.

With the exception of climbers, I prefer growing the rest in tubs, boxes, vases, and pots, regulating these according to their several habits and sizes. Great judgment is necessary in the judicious selection of conservatory plants, and a much happier effect can be produced by a well-selected few than by a heterogeneous mixture of many species. If the intention be to have an abundance of bloom through as long a period as possible, then such as are fine free-blooming species, not of very robust habit, should be chosen. In conservatories of limited dimensions, care should be exercised that too many species of a genus, or too many of a colour, be not introduced. Attention should also be paid to procure good specimens in the first instance, and sufficient room should be allowed to retain them in that state, and they should be frequently turned round, to give them the benefit of the light. Some discrimination is also necessary in their arrangement, so that all sun-loving delicate plants be placed forwards, and the rest in the rear or middle. Cleanliness is absolutely necessary, not only for the appearance of the house, but for the welfare of the stock. The operations of cleansing, watering, and arranging are better done in the early part of the day; and as this is the highest in grade, and generally the most imposing in appearance of all plant-structures, so it should have the more scrupulous care and greatest nicety in keeping; all dead leaves and branches should be removed as soon as they appear. Many conservatory plants cannot well be propagated by cuttings, and must therefore be multiplied by budding, grafting, layering, by seed, or division of the roots, as may appear more suitable in each case.

CHINESE FLOWER GARDENS.

The Chinese gardens are of a peculiar character, and differ altogether from ours in their arrangements, while the care bestowed upon them by their possessors exceeds anything of which we could have formed an idea. To each branch, often to each leaf of a tree or shrub, the utmost pains are taken to give the appropriate turn, and the gardeners may be seen sitting constantly beside the plants, and employed in binding and pruning them, in order to accomplish the desired form. The production of the greatest variety and contrast of colours is the chief object of the Chinese flower-gardeners. Strangers to refinement and the tender emotions, the Chinese have no taste for the pure and tranquil enjoyment which the perfumes of sweet-scented flowers yield. It is only in gaudy colours, and by a marvellous skill in developing singular growths, that the Chinese gardener excels. Long and straight alleys run directly through their gardens, and are bordered by low trees of one and the same species. We visited these gardens (in the vicinity of Canton) in the month of November, and remarked the following objects: close to the entrance were large masses of Chrysanthemums, the blossoms of which had attained an extraordinary size; then followed whole plots of Citrons and Shaddocks, which were raised in pots, and loaded with fruit; and it was remarkable that all these fruits were divided into segments, and thus formed permanent monstrosities, which were further propagated by grafts. It is by such mis-growth that they acquire a finger-shaped appearance, which occurs also occasionally in our conservatories. In China these fruits are cultivated assiduously, not only for the adornment of the gardens, but also for the sake of the well-known Chinese preserved citron, of which large quantities come to us by commerce. For this purpose they use chiefly the smaller fruits, three or four inches long, which are boiled in refined sugar. The larger fruits of monstrous shape are of the Shaddock kind, and often from ten to eleven inches long, while the several segments extend singly in all directions. In the gardens these odd-shaped fruits, as well as the sweet Oranges, with which whole plots are planted, have a neat appearance, as they do not allow any trunk to form, but force them at once to spread into branches. Large borders are to be seen planted with *Camellia Japonica*, and others with Cockscombs, some with white, others with yellow or red flowers; the yellow-flowered plants had shot particularly high, and they were so arranged that all the plants in a bed were of one and the same colour. We also saw in the gardens a species ot Scilla, very like *S. maritima*, which showed the same sort of monstrosity as the Cockscomb. We observed Bamboos in pots, the stems of which were two to three feet high, and were wound into a spiral form from below upwards. Among the trees were the Lee-chee, Banana, *Averrhoa carambola*, and various Palms, on the stems of which Epidendrums were trained. The ponds of these gardens, some of which were very large, contain beautiful fish, which are fed by a disgusting but common method among the Chinese, which is said to render them very plump. The stools in the pleasure-houses are for the most part of a coarse sort of porcelain, or they are formed of large flat stones, supported by wooden frames, which, by their coolness in summer, must be very agreeable to sit upon, when one is accustomed to them. Single borders are frequently edged with a small-leaved Box-tree, and the long walks are bounded by hedges of *Averrhoa*, *Olea fragrans*, and other plants, which were new to us. On the whole, we must allow that the planting in regular masses of the large-flowered Chrysanthemums, with Oranges, Camellias, Kalmias, and tall Cockscombs, is not altogether devoid of beauty; but a stranger can hardly reconcile himself to an arrangement which must appear to him so contrary to the rules of good taste. Hydrangeas and Asters seemed at this time to be out of fashion, for we saw very few of them.—*Dr. Meyen's Reise um die Erde.*

ON THE CULTURE OF DATURAS.

BY MR. JESSE WHITE, DURHAM.

These plants, which are perhaps more generally known by their old name Brugmansia, are among the most showy in cultivation; their long funnel-shaped flowers, depending from the branches, have a very handsome appearance, whether in the conservatory or set out on the lawn.

The pendulous character of the flowers makes the plant look better when grown as a standard; all the varieties are rapid growers, and the best method of propagation is by eyes, in the same way as vines are treated. If the last season's growth be cut into pieces, with an eye to each, and then potted one in a pot, and placed in a gentle bottom heat, they will soon strike; they require to be kept moist. During the winter they should not be forced much, but in spring they will require potting, and may then be plunged in a bark bed, or placed in a warm stove; as they make side buds these should all be rubbed off, with the exception of two or three nearest the top, and this must be continued until the stem has attained such a height as the standard is intended to be, which ought never to be less than two feet and a half, and may be much more. When this result has been attained, the top will require to be pinched out, which will cause the few side shoots to form branches rapidly. Up to this time the plant should be frequently shifted into pots a size larger. If the heat be genial the plant will make rapid progress, and when the laterals have made about four inches growth pinch out their ends, in order to induce the production of sufficient branches to make a head; it is necessary, however, to take away such as would tend to make it too close, or spoil the shape. The plant may be allowed to remain in the stove until bloom is shown, when they may be removed to the greenhouse or conservatory to perfect their flowers, and where it will continue to grow and bloom a long time, filling the air with a rich perfume. The red and orange species, *Datura sanguinea* and *D. lutea*, are not of so rapid growth as *D. arborea*, the white, and *D. Knightii*, the double white, but the treatment of all is similar. I have always found them prosper best in a mixture of loam, peat, and dung from a stale hotbed, using about one-half of the latter ingredients. If it be desired to place the plants on a lawn, it is important to select a sheltered situation, where they may be screened effectually from wind, for the wood is very brittle, and the foliage being large, they are soon injured if this precaution be not attended to. Some prefer plants for out-of-doors decoration which have been allowed to take their own course, without attempting to form standards of them, although in my opinion the former plan does not show off the blossoms to so much advantage as the latter. If left to make their natural growth they may be planted out in June, and should have stakes applied, to hold them in the same manner as a Dahlia, and had better be plunged in the ground in pots, which enables them to be taken up for in-door protection during the winter. The Datura is rather an ill-growing plant if not attended to by pruning annually, otherwise they will be too thick with branches, and weakly. The red spider is their greatest enemy when in the house, but moisture with sulphur and water, occasionally syringed over and under the leaves, affords an easy means of preventing the ravages of this destructive enemy. The bloom from a mature plant is extremely attractive, but they will flower very well from an eye the first year.

ON THE TREATMENT OF LEONOTIS LEONURUS.

BY JOHN HINE, PRESTON.

Having been very successful in growing this very handsome but little cultivated autumn-blooming plant, I shall be glad to see the following brief remarks in your interesting and useful little *Cabinet*. It will be found one of the most accommodating inhabitants of the greenhouse, being equally as hardy as any of the Fuschias, and as easily grown. About the beginning of March, plants struck from cuttings last summer will have begun to grow; they should then be shifted into thirty-two-sized pots, filled with good loam and a little peat and silver sand, having plenty of drainage, consisting of chopped turf and well-rotted manure in lumps, about equal parts. When repotted, place the plants in a light part of the greenhouse, where they will get plenty of air; they must have but little water for the first two or three weeks, after which they may be set in pans, but they must not be allowed to stand constantly in water. By the first week in May they should be finally shifted into the pots in which they are intended to bloom (No. 4); about the middle of the month, when all danger from frost is over, plunge the pots up to the rim in a south border and supply them plentifully with water, and once in eight or ten days give them some liquid manure. They will require nothing else but tying up, and occasionally turning the pots round, to prevent the roots from running into the border, till the end of September or beginning of October, when they should be removed into the greenhouse, where they will flower for eight or ten weeks; after this they may be cut down, put under the greenhouse-stage, and kept nearly dry till the following growing season. Treated in this manner, *Leonotis Leonurus* forms handsome plants of from five to six feet in height and from eight to ten in circumference, clothed with foliage and bloom from top to bottom.

HINTS ON THE MANAGEMENT OF CEREUS SPECIOSISSIMUS.

BY J. G.

It is generally considered necessary for the successful cultivation of most plants that a knowledge of their natural habitat should be known, but many of this tribe are exceptions to the general rule; we may name, for instance, *Cereus speciosissimus*, which is a native of South America, and was for many years treated as a stove plant, potted in the poorest soils, such as broken bricks, old lime rubbish, and the like, kept constantly excited with heat and moisture; in this case, departure from the treatment that their natural localities would suggest has rendered it a desirable plant to every person that possesses a greenhouse.

The compost with which I pot my young plants is equal portions of peat and strong yellow loam, and a little river sand, all having been well exposed to the weather for some months previous. I never mix the soil before it is wanted for use, when it is well sifted and the lumps placed over the potsherds for drainage. When the plants have attained a proper size for blooming, I add more of the loam in repotting them, particularly to *C. speciosissimus*, and in all cases give plenty of drainage. I also occasionally water with a little weak guano or manure water, when the plants are young and growing.

The best time for propagating by cuttings is when the plants are growing freely. I make them of whatever size can best be spared from the plants; and those that are of young and unripe shoots I lay on a dry shelf in the greenhouse for a fortnight, to dry up the sap, which prevents them from rotting, and causes them to emit roots much sooner. They are planted singly in small pots, and placed in a moderate hotbed frame; when they have filled the pots with roots, they are repotted and placed in an intermediate house, where they remain for the summer, and receive a good supply of water. In the autumn they are allowed to become quite dry, and are wintered in a dry airy part of the greenhouse. In spring, they are again removed to the intermediate house, and very little water is given them, which is increased as the season advances. By the end of the second summer they will have grown to the size of good blooming plants; and in the autumn they should be placed out in a warm airy part of the garden, to ripen the shoots thoroughly. About the usual time of housing other greenhouse plants, they should be again dried, and put, as before, in the greenhouse. I place the first for forcing in the intermediate stove, about the beginning of February, and continue a succession till they bloom in the greenhouse, which is about June. Such plants will bear the greatest extremes of dryness and moisture, and without proper attention is paid at the season of rest to keep them quite cool and dry, they never will bloom properly. The forcing must be commenced at a low temperature, and water at first given very sparingly; when they have begun to grow freely, and the bloom-buds are well started, they must be watered, not by a continual dripping, but by copious applications, and at intervals of a fortnight, during the growing season, with liquid manure. When the bloom-buds are sufficiently advanced, I thin out all those which are large and small, leaving them as near one size as possible, and at proper distances, to allow the blooms to expand. When they have flowered, I keep the plants rather dry for a short time, and place them in a cool shady part of the greenhouse, or under a north wall. In a few weeks they will again assume their usual firm and healthy appearance, and begin to grow; then I clear off all the decayed blooms and seed-pods, and place the plants for the autumn in the garden, in a south aspect, where there is a free circulation of air, giving them a good supply of water; after this they are moved to the greenhouse and treated as before. I train them to iron stakes, made to fit the outside of the pots or tubs, and fasten them with wire. Attention should be paid to early training, and to stopping all shoots as soon as they attain the required height; all useless side and bottom shoots I rub off, and occasionally some of the old shoots are cut out and replaced with young ones.

When in full bloom, *C. speciosissimus* is one of the most brilliant flowering plants that can be introduced to the greenhouse, conservatory, or drawing-room window, and being of such easy culture entitled to be more extensively grown. There are several very fine hybrids which are also deserving companions to the above.

DESIGN FOR THE GROUNDS OF A VILLA RESIDENCE, COMPRISING EIGHT ACRES.

BY T. RUTGER, ESQ.

THE accompanying design comprises about eight acres, and has a lodge-entrance leading to the house, and from thence to the stables. A part of the ground is supposed to be divided off by a wire fence, for a paddock, with a cow-house and yard, which can be entered from the public road. At the west end of the house there is a conservatory, and at the east end are the offices, which are entered from the road leading to the stables. At the north entrance of the house a flower garden is shown, with a place in the centre, destined for an architectural structure for embellishment. The lodge, being near to the garden, may be occupied by the gardener, who might be employed as the general manager of the out-door department. The lawn at the front of the house may be dotted with choice evergreens, and the clumps with dwarf shrubs and flowers. There is a walk leading round the southern part of the premises, with an alcove at the south-east, and also one at the south-west of the same. What remains may be understood by the reference.

Reference.—1. Reading or tea room. 2. Aviary for fancy birds. 3. Bowling-green. 4. Laundry and brewhouse, with yard. 5. Piggery. 6. Poultry-court, and dove-house in the centre. 7. Stable-yard, stables, and coach-house. 8. Dung-yard, with entrance from the public road. 9. Frame-ground, with an erection for tool-house and mushroom-house. 10. Compost ground. 11. Forcing-house department, with sheds. 12. Room for under-gardener. 13. Kitchen-garden. 14. Slips which can be appropriated for fruit trees, small fruit, etc. 15. The lodge. 16. Cow-shed and yard. 17. Public road.

REMARKS ON DODECATHEON MEADIA.

BY AN ADMIRER.

The delight with which the botanist views a newly discovered plant can only be conceived by the student of nature; it seems to expand his ideas, and give him new conceptions of the wisdom of the Great Creator. He contemplates with admiration the harmony of its parts, which he finds so happily adapted to its native situation on the globe; he learns by the character of the plant the climate to which it belongs, and he soon conceives the utility of the individual plant to the grand link of vegetation by which the animal world is supported. The pleasure that the botanist enjoys, when he first meets with an unknown plant, is not to be described. He deems it as the most important event of his life, and he joyfully bestows on it the name of some esteemed friend or eminent countryman: his fancy pictures it growing under cultivation with his native plants; his immediate acquaintance covet it for his sake, and his name is justly registered amongst those who have benefited their country by peaceable pursuits.

The plant of which I am about to speak is indigenous to the Columbian world, that vast field from which such store of novelty has been poured into the more known quarters of the globe. It grows in several parts of North America, and was first sent from Virginia by Banister to Bishop Compton, in the year 1704, and Miller mentions having seen it in blossom at his garden in Fulham, in the year 1709. After which, the plant was lost for several years, till it was again obtained from America, by Mr. Catesby, about the year 1744. The latter, in his "Natural History of Carolina," gave it the name of *Meadia*, in honour of Dr. Richard Mead, an English physician of that day, whose name was revered by the eminent of all parts of Europe. On this account I feel a regret that Linnæus should have thought it necessary to change the generic term of this plant from that of *Meadia*, and more particularly so since the one he has bestowed on it seems as inappropriate, *Dodecatheon* being derived from two Greek words, which mean twelve gods; and the only cause he could have for adopting so whimsical a name was from the observation that each of these plants generally produced twelve corollas. *Meadia*, however, remains as the specific name of the plant.

This elegant plant flowers about the end of April, or the beginning of May; the stalk, after rising up to about eight inches in height, throws out an umbel of flowers, gracefully pendent. The petals are of a rosy lilac, inclining to the colour of the peach or almond blossom, and they are reflexed, or turn back over the calyx, giving the appearance of a half-expanded parasol, and which resemblance is considerably heightened by the long tapering shape of the parts of fructification and the golden colour of the anthers. The Dodecatheon should be planted in a shady situation, where the earth is of a loose moist nature, and its beautiful delicacy and graceful formation render it deserving a situation amongst the plants that are potted for the house. It is easily propagated by offsets, which should be taken from the old plants in the month of August, that they may be established before the frost comes on. It is increased more rapidly from seed, however, which the plant generally produces in plenty; these should be sown soon after they are ripe, either in pots or a shady border. If these plants are much exposed to the sun whilst young they are almost sure to perish, so impatient are they of heat. Many persons have lost their stock by planting them in dry soil in the most sunny parts of the garden, without reflecting from what latitude they were originally brought.

ON GROWING PINKS IN POTS.

BY W. IBBETT.

It is very common to see Picotees and Carnations grown in pots, but not so with the Pink, and why so universal a favourite as the latter flower should not be cultivated in a similar manner has long been to me a mystery, especially when we consider that it is as capable of such treatment, and indeed more so than its above-mentioned congeners. Florists appear to have followed the customary and more inconvenient plan of bedding them, merely because their predecessors have always adopted the practice, and without sufficient grounds. There is not one single point in connection with the Picotee which may not just as reasonably be urged in the claim of the Pink for the system of pot-culture, and the same may be said of its adaptability with the Carnation. In fact, there is more toil by far in the labour of superintending Pinks in beds than there is in growing them in pots. The buds require to be guarded and tied up, an operation performed far more effectually, and in fact neater, when under the latter rather than the former system of cultivation. It is true some have asserted that the colours do not come so true in pots as they would do in beds; but when large-sized pots are employed, I have never had a single instance where this has been the case, throughout the whole of my experience, having grown the same sort in both ways simultaneously. In pots they are comparatively free from the ravages committed by vermin, and when attended to regularly and in a proper manner, the plants have made a cleaner growth, with as much healthy "grass," in proportion, as if grown the other way. Pipings should be brought on under a hand-glass, and may then be pricked out regularly at three inches apart, in the row, and six inches between the rows, in a bed properly prepared for them. In September they should be potted in a mixture of two-thirds well-rotted turves and one-third ow-dung thoroughly decayed, and well incorporated together. Place moderate drainage in thirty-two-sized pots, and fill up about half full of the aforesaid compost. The plants must be taken up carefully, so as not to injure the fibres and tender rootlets; spread the latter equally, and fill up, gently pressing the soil around the roots. It is of moment to bear in mind the plants must not be sunk in the soil, but that the collar of the root must be even with the surface of it. After a gentle watering let the pots be set in a close frame for a couple of days, and they will in a short time become established. During winter they will require all the air they can have, and water but moderately; when the weather is fine let the glasses be all taken off. The plants will do well till March, if the frames are preserved in a dry and clean condition, free from any extra moisture. When this month has arrived, they may be shifted into twenty-four-sized pots, and to these a liberal supply of crocks must be given, to secure good drainage, and the compost as before. The fibres must be carefully attended to at the time of shifting, and the soil not pressed too firmly about them. They may now be placed on a dry floor, cinders, or gravel space. Allow but one or two blooming spikes, pinching off all superfluous ones, and when the buds swell out, remove all but two or three of the most promising; as the time draws near for them to burst forth, slit them down in the centre, that the petals may be free to expand evenly, and form a regular bloom; and now will be found the advantage of pot-culture, for the flowers are attended to much better all through the time of blooming. I have never seen a reason why they should not be exhibited in pots instead of, as is the usual practice, as cut blooms. When coming into flower, a little manure-water, not too strong, is a great advantage in the production of fine blooms.

ON THE TASTE FOR FLOWERS IN THE METROPOLIS.

BY VIATOR.

After several years' absence from the metropolis, I had occasion often during last summer to walk through its closely populated suburbs, when my attention was attracted by the almost universal manifestation of a taste for floriculture in the windows and small plots of ground in front of the houses. The labyrinthine streets displayed the outward marks of great varieties of pecuniary endowments, and were inhabited by people of almost all the grades of middle and low life; but, with few exceptions, indications of this taste pervaded them all, and a wreath culled from the bountiful lap of nature told the passer-by that Flora and her kingdom were not forgotten. I was prepared for something like this development of a love of gardening, from having spent my early days in London, and thus being personally acquainted with the earnest yearnings of its citizens for green fields and flowers; but I am convinced, from a little attention to the subject, that the taste has more than kept pace with the increase of the population, and must be considered a stronger characteristic of the people than it was then. As I passed from the Great Western Railway one bright summer's morning, before the natural blue of the heavens was travestied by London smoke, what a gorgeous sight presented itself in the decorated balconies of the noble and wealthy inhabitants of that aristocratic quarter! The owners were probably yet slumbering, but what beauties were silently pouring their fragrance on the morning air! Pots of the choicest greenhouse plants, wet with the dews of night, gave sure intimation of the floral tastes of those who dwelt within. Roses and Pelargoniums (Geraniums in our old vernacular) were especially abundant, as they will always be in such collections, from the facility with which they are grown. Myrtles and other evergreen shrubs mingled their dark green with the foliage of gayer tints, and Mignonette and Heliotrope, poured forth their delicious perfumes. These balconies, opening probably from drawing-rooms, were evidently little consecrated spots, where tastes and refinement kept watch from day to day, and where the purest pleasures might be enjoyed. Some, indeed, of these accessories of fashion might be the appurtenances of mere wealth, evincing the love of display of their owners; but I cannot believe this was the case with many of them. The flowers looked like loved things, and uttered silent tales in the ear of a contemplative observer. I could imagine that youth and beauty had tended them; that the sight of them had relaxed the brow of care, so often a tenant of the palace as well as of the poor man's cottage; and that sickness had been rendered less painful by their innocent beauties. Frail mementoes of our evanescent joys! Full many a lesson is conveyed by your chaste calices and petals. But although *general*, this exhibition was far from universal, and many mansions were quite guiltless of green leaves and flowers. Was it possible to avoid the conclusion that between the flower-loving and the flower-neglecting there must be some important differences both of intellect and of heart?

This decided taste in the higher classes, so publicly acknowledged, made me look more curiously for its development in the grades of social life below them, and I was pleased to find that wherever I went through the great city the same floral tendencies displayed themselves. Of that sight—worth travelling over all England to see—Covent-Garden Market in the early morning, I can only utter a passing word of recognition. It is the mighty storehouse whence all the luxuries of vegetable life are dispensed to the largest city in the world. But of this *in transitu*. Girls with baskets, and men with carts were found in all the great thoroughfares, bearing productions redolent of odours and sparkling with beauty. Bouquets of cut flowers, and plants ready to be transferred to the garden of the amateur, presented themselves in such plenty as to prove that there must be thousands of buyers who think that money may be worthily spent on flowers, as well as on other equally ephemeral luxuries. Even into the places of common business flowers had insinuated themselves. What a cheerful appearance many shops presented, when, arranged among their wares, pots of healthy-looking plants invited attention. And although cultivation becomes more difficult as the population is denser and gardens are wanting, yet even in such localities (Fleet Street and Ludgate Hill, for instance) the upper windows are not deficient in evidences that the inhabitants love flowers. The influence of such a taste must be more marked in these crowded depôts of commerce than among the wealthy residents of the suburbs. The latter can easily find egress to the Parks and other rural spots; but a tradesman in Cornhill who cultivates a few floral favourites, must watch them and linger over them with a joy which the more favoured. possessors of gardens can scarcely imagine. It is like possessing *one* object of tenderness, while others bask in the smiles of large families and many friends. The more opulent in the treasures of the heart are doubtless the happiest; but the owner of one idol worships it with an intensity the others know nothing of.

But I must come to that which most attracted me, and the bearings of which are most important. Within the last quarter of a century what immense additions have been made to the great city! Scenes of my youth! Pretty cheerful streets which twenty years ago bordered on green fields, listened to the flail, and could catch a glimpse of a distant windmill, how altered and base have you become! Improvements in the centre of the great metropolis, and the influx and increase of population, have made those remembered places crowded thoroughfares, and their inhabitants have been driven in widening eddies still farther from the centre. What were the suburbs then are now the town, and the inquirer must proceed farther for those pleasant spots, the semi-rural dwellings of the artisan and the villas of the middle classes. But if a natural repugnance was felt at seeing the arenas of former games of cricket and kite-flying turned into the very thickest marts of trade, ample restitution was afforded by the present condition of the *existing* outskirts of London. With retrogression there has certainly been improvement in almost everything, but in nothing more than in the floricultural tendencies of the population. Long streets, extending in some cases for miles in one direction, display before almost every house a plot of ground, generally laid out with neatness, and adorned with shrubs and flowers. I observed this peculiarly in winter, when, of course, none but amateurs look much after their gardens; yet, while some of the plots would have been better for a little trimming, on the whole the appearance was excellent. Hyacinths in pots and glasses adorned many of the windows, and evergreen shrubs gave a cheerful appearance to the fronts of the dwellings. Laurel of various kinds, *Arbor vitæ*, *Phillyrea*, *Aucuba japonica*, and *Rhododendron*, I particularly noticed as being very abundant. How obvious was the reflection that a vast amount of innocent recreation and unembittered happiness must redound to the teeming multitudes of cultivators of these graceful appendages of social life. But has the poor man no flowers, and is his arduous lot deprived of the alleviation which the culture of plants on the smallest scale can confer? I fear these questions must generally be answered in the affirmative, in reference to the working and poorer classes of large towns. Even if a few square yards of ground are doled out to the dwelling of the poor man, there are too many low characters and "untented" and mischievous bairns to allow much of green to grow. In this respect the agricultural have a decided advantage over the manufacturing population, for in the country a cottage may have as much land attached to it as will allow twenty tenements to be built upon it in a city. But the ruling passion for natural objects will force itself into notice even in the most untoward circumstances. Fine Auriculas, Polyanthuses, and Dahlias are grown by the silk-weavers of Spitalfields, sometimes in little yards, sometimes in pots in the windows or on the tops of the houses. In what alley will not the observer discover a struggling attempt after floricultural honours? A Wallflower in a blacking-bottle, or a Carnation in a gallipot, are sure, though imperfect and humble, indications of the elementary feelings which, in better and more favoured circumstances, delight in conservatories and greenhouses. Thus, through the whole extent of London, I found an increasing love of those pursuits which have always raised men's characters and improved their feelings. It is true this taste for flowers and gardening is often exhibited in the midst of appliances very inadequate to its development, but it is beneficial notwithstanding.

VARIEGATED ORCHIDS.

PERHAPS there are no objects throughout the whole vegetable kingdom more delicately beautiful than the metallic-veined foliage of the small group of insignificant-flowered Orchids, of which Anæctochilus may be taken as the type. Formerly one or two kinds only were known in cultivation, but now their number is so far increased that a group of them becomes an exceedingly interesting and attractive feature. Unfortunately they require a high temperature, and thus their cultivation is limited only to those who can provide them with a tropical climate. They are grown in a mixture of light fibrous peat (Shirley peat, carefully selected, is the most suitable near London) and sphagnum moss cut up very fine; three parts of sphagnum are used to one part of peat, and a few small potsherds are mixed in the moss; the pots also must be thoroughly drained. The plants should be kept up even with the top of the pots, and the soil packed about them rather lightly. They are then to be plunged in moss at the hottest part of an orchid-house or a damp stove. In winter they require very little water; but in summer, when they are growing freely, and there is a full command of heat, water may be used with freedom. The temperature in winter should be from 65° to 75°, and in summer from 70° to 90°. The plants are best covered with ample bell-glasses, which should be wiped dry every morning; and the plants should be frequently *slightly* smoked with tobacco, to keep them free from insects.

The following are the kinds now in cultivation, with the names by which they are known in the nurseries:—***Anæctochilus setaceus***, the leaves beautifully and closely netted with lines of gold colour, on a rich velvety brownish green surface. There is a variety similar to this, with the veins a few shades lighter. ***Anæctochilus xanthophyllus*** (*A. setaceus pictus*), the leaves with a broad bar of gold colour down the centre, and marked on each side with netted lines of the same on a dark green ground. ***Anæctochilus intermedius***, intermediate between the two preceding, having a smaller bar down the leaf, but otherwise marked with golden network on the dark velvety green surface. ***Anæctochilus striatus***, this has narrow lance-shaped foliage, marked with a bar of gold through the centre, upon a dark green ground. ***Anæctochilus Lowii*** (*Cheirostylus marmoratus; Dossinia marmorata*), very robust velvety foliage, of a rich dark mottled bronzy green, marked with fine transverse lustrous golden lines. Another variety of this differs in being a few shades lighter in colour. ***Anæctochilus Lobbianus*** (*A. latimaculatus*), the foliage of this is of a rich green, the midrib silvery, and the rest of the surface marked with fine transverse silvery lines. ***Physurus argenteus*** (*A. argenteus*), the leaves green, thickly netted with silvery lines. ***Physurus argenteus pictus*** (*A. argenteus pictus*), green, with a wide central silvery bar, and otherwise netted with silvery lines.

The beautiful *Cissus discolor* would be a most appropriate climber for a house in which these variegated Orchids are kept, the shady and still atmosphere of such a situation being favourable to the development of the beautiful markings of its leaves; and, along with the New Holland Pitcher Plant (*Cephalotus follicularis*) and the Fly-trap (*Dionæa muscipula*), these form a most interesting group.

ON SOWING GRASS SEEDS, AND MAKING A LAWN.

BY FESTUCA.

WHERE it is possible to obtain good fresh turf, without much trouble and expense, the necessity of sowing is generally obviated, and we have a smooth and even surface of grass sooner than by seed; turf, however, is not always to be had, within a reasonable distance, of such a nature as to be fit for laying down on a lawn, and is too often infested by weeds which are tedious to remove; and in other cases, where the surface to be covered is very extensive, sowing seed is much more economical than removing turf. For sowing down grass seed, the ground should be lightly dug over during the middle of March or August, immediately after which the seed should be scattered broadcast, rather thickly, then raked and rolled well in. Where the lawn adjoins any other grass-piece, care should be exercised to have the soil on that side somewhat higher, so that when the roller is brought over, the whole may be on one uniform level. When the young grass has come up no farther care is necessary but to keep it free from weeds, until it is strong enough to bear mowing. For sowing the seed, choose a dry day, in a showery season, when there is a chance of a beneficial shower after the raking and rolling in has been performed. To make a perfectly smooth even lawn, it is requisite to have recourse to a line, for after the growth of the grass it will be a difficult and unsatisfactory business to attempt to level it; on the ground being dug, levelled, and evenly raked in the first instance depend the smoothness and beauty of the lawn. The most suitable seeds for lawn grasses are *Festuca ovina*, *Avena flavescens*, *Cynosaurus cristatus*, *Poa pratensis*, *Poa trivialis*, *Trifolium minus*, and White Dutch Clover. Some prefer a mixture comprising other and stronger-growing varieties; but the smaller the proportion of the vigorous kinds, the finer and softer will be the turf, and the less mowing will be requisite. All the species of rye-grass are very objectionable, although too frequently introduced, on account of the rapid growth of that class of grass.

NOTES ON NEW AND SELECT PLANTS.

179. PELARGONIUM ENDLICHERIANUM. Nat. Ord. *Geraniaceæ.*—A distinct and pretty species, introduced from the Western Taurus to the Botanic Gardens at Copenhagen, from whence seeds were forwarded to the Royal Botanic Gardens at Kew. It first produced its blossoms in July of the present year, in a cool greenhouse. It was until lately supposed that the genus Pelargonium was exclusively to be found in the colony of the Cape of Good Hope, but a few have of late years been introduced from South Australia, and the present species from the Caucasus. The plant, which is herbaceous, grows about eighteen inches high. The flowers are produced in an umbel, of about ten to twelve blooms in each, of a deep rose. The upper two of the five petals are rather large (being more than an inch in length); the three lower petals are extremely small, being less than the sepals. (*Bot. Mag.*, 4946.)

180. MORICANDIA RAMBURII. Nat. Ord. *Cruciferæ.* Syn. *Brassica moricandioides.*—A hardy perennial, discovered by Messrs. Webb, Rambur, and Boissier, at an elevation of near three thousand feet, on the mountains of Granada, growing mostly in the clefts of the rocks. It attains near two feet in height; flowers purple, produced in terminal racemes on the branches, somewhat resembling a Wallflower in form and size. The leaves are large, of a glaucous green. (*Bot. Mag.*, 4947.)

181. GALIPEA MACROPHYLLA. Nat. Ord. *Rutaceæ.* Syn. *Conchocarpus macrophyllus.*—Mr. Makoy forwarded this plant to the Royal Botanic Gardens at Kew. It is a native of Brazil, and consequently

requires the temperature of our stoves; it does not grow to much more than a foot in height, and the flowers are not of a very showy character; they are borne in a spike or raceme, of near six inches in length, two or three together, each blossom about an inch across; the petals, which are five in number, are narrow, of a pale rose or blush. Leaves large, ten to twelve inches long and four broad, elliptic-oblong. (*Bot. Mag.*, 4948.)

182. AGAVE STRIATA. Nat. Ord. *Amaryllideæ.*—A Mexican Agave, sent from Real del Monte to the Kew Botanic Gardens. This species is closely allied to *A. geminiflora*, but differs slightly in the foliage. It is almost a stemless plant, with very numerous, narrow, thick, rigid leaves, two to two and a half feet in length, terminating with a strong horny point, which is very pungent. The scape or flower-stem rises from the centre of the leaves, to the height of four to six feet, and of proportionate thickness. The florescent spike is about three feet long, densely covered with flowers, which are small, of a dull greenish sulphur. The filaments are long, the anthers large, of a dark purple. (*Bot. Mag.*, 4950.)

183. PACHYPHYTUM BRACTEOSUM. Nat. Ord. *Crassulaceæ.*—A new genus, allied to the Echeveria, of which the present is the only species. Sir William Hooker remarks that it is "distinct both in habit and in the structure of the flowers, and very remarkable in the curved, secund, bracteated spikes of flowers; in the large campanulate calyx, much exceeding the corolla in length; in the two spurs at the base of the leaves of the peduncle and of the bracteas; and in the two scales or ears at the base of the lamina of the petals. There is a most striking contrast between the colour of the petals (scarlet) and the pale glaucous hue of the large calyx and bracts, and all the rest of the plant; the flowers are more readily brought into view by the curvature of the spikes. The plant only requires the protection of a temperate greenhouse. It flowers in the summer months, and the spike becomes erect after flowering." It is a native of Mexico.

184. GALEOTTIA FIMBRIATA. Nat. Ord. *Orchideæ.*—M. Warczewitz discovered this species on the Quindos and at the sources of the Maranon, and M. Wagener in the woods of Ocaña, at an elevation of near five thousand feet above the level of the sea. A specimen of this plant lately flowered in the stove of Henry B. Kerr, Esq., of Cheshunt, who imported it from South America. In habit it resembles a stemless Maxillaria. The flowers are a pale brownish yellow, striped or streaked with crimson; the sepals and petals are about four inches across from tip to tip; they grow in a raceme of two or three together. The foliage is about six inches long, and from one to two inches in breadth, tapering at the base. Pseudo bulbs oval, two-leaved. (*Gard. Chron.*, 183.)

185. CALCEOLARIA ERICOIDES. Nat. Ord. *Scrophularinæ.*—Mr. Hartweg collected seeds and dried specimens of this species in Colombia, which he forwarded to the Horticultural Society. Dr. Jameson, of Quito, also collected seeds, from which Mr. Anderson, of

Edinburgh, raised plants. The specimens discovered were growing at 12,000 feet elevation. When in its natural habitat it appears to have formed a very handsome object, and is highly spoken of by its discoverers; so far, however, it seems to be in cultivation of a rather straggling habit, which is perhaps to be partly attributed to improper treatment. From the dried specimens it appears to be a stiff, erect, woody shrub, and, when the wood is ripe, resembling *Erica odora rosea*. The plant is covered with a short coarse down. The flowers are produced in a dense naked panicle, of nine inches in length; they are of a peculiar form, the corolla being narrow, folded upon itself by a bend near the middle, clear yellow; leaves linear, the edges rolled back until they meet. (*Hort. Soc. Journ.*)

186. Pinus Grenvilleæ. Nat. Ord. *Coniferæ.*—A noble Conifer, discovered by Mr. Hartweg on some of the highest mountains near Tepic, in Mexico. It is of robust habit, and has in consequence been called "Ocote macho," or male Pine, by the natives. The foliage is very robust, from twelve to fifteen inches in length; leaves are in fives. The cones are solitary, pendulous, straight, sixteen inches long, and three to four inches across the base. This species is easily distinguishable, from its straight cones and robust foliage. In its native habitat it attains to the height of seventy to eighty feet. It has been named in honour of the Right Honourable Lady Grenville. (*Hort. Soc. Journ.*)

187. Pinus Gordoniana. Nat Ord. *Coniferæ.*—A companion to the last-named species, introduced by the same gentleman, from the same locality. It is a remarkably handsome species, possessing the longest foliage of any of the tribe yet brought to this country. It attains about the same height as its predecessor. It is called "Ocote hembra" or female Pine, by the natives. The leaves are produced in fives, are sixteen inches in length, not so robust as in *P. Grenvilleæ*, and of a light green. The cones are pendulous, generally solitary, from four to five inches in length, and one inch and a half at the base; they are slightly curved, and regularly tapering. It is named in compliment to Mr. Gordon, of the Horticultural Society's Garden. It is quite hardy, and is a splendid species, the long slender foliage rendering it an attractive object. (*Hort. Soc. Journ.*)

188. Lælia purpurata. Nat. Ord. *Orchideæ.*—This is the finest species of the genus, and remarkable for the richness of its colouring The petals and sepals are white, tinged with pale rose, extending to a length of nine inches. The labellum is golden orange, in the interior striped with purple lines, and the limb bright violet, shading into rose, marked with crimson veins. In the proportions of its flowers this species rivals *Cattleya Mossiæ*. The flowers are united from three to five on the same stalk. It was discovered in 1846, by M. F. De Vos, in the Isle of St. Catherine, on the south coast of Brazil. This collector, in the service of M. Verschaffelt, introduced the plant in a living state to the gardens of his patron, who has lately

sent it out. This magnificent species should be possessed by every grower of this tribe of plants. (*Flor. des Serres*, 1138.)

189. Dircæa Blassii. Nat. Ord. *Gesneriaceæ.*—This very beautiful plant ranks amongst the foremost of the tribe of Gesnerias. It is a native of Brazil, and named in honour of M. Blas, of Elberfeld. It is remarkable for its pendulous habit and abundant bloom; with this exception, nearly all the Dircæas are of erect growth. A specimen of *D. Blassii*, which flowered in the establishment of M. Van Houtte, produced five branches, each more than seven feet in length, from which proceeded about one hundred and fifty flowering branches; the plant being ornamented with at least two thousand blossoms! The flowers resemble those of a Gesneria, with an elongated upper lip, and are of a bright orange-scarlet; in length they are about three inches. They are borne in whorls around the pendent branches, of which there are several on each branch. Upwards of twenty of these vivid blossoms are produced in each whorl. This promises to be one of the most attractive plants which has been introduced for many years, and will no doubt be a universal favourite, succeeding well in a warm greenhouse; in other respects it requires similar treatment to the Gesneria. (*Flor des Serres*, 1140-42.)

190. Swammerdamia antennaria. Nat. Ord. *Compositeæ.*—This is a small, compact, evergreen bush, not at present more than three feet high. It has angular viscid shoots, and a foliage the colour of *Euonymus Japonicus.* The leaves are, at the largest, not more than an inch long, and generally smaller, obovate, apiculate, or perfectly blunt, veinless, concave, with a little mealiness on the under side when young. The flower-heads are small, white, and collected in little lateral corymbose panicles. It is found wild in Van Diemen's Land, on the sides of Mount Wellington, where it flowers in the months of January, February, and March. The late Professor De Candolle gave it its name, in allusion to the form of the pappus, which he thought resembled the antennæ of an insect—a very obscure peculiarity. A hardy, evergreen, small shrub, growing freely in any common garden soil, and easily increased by cuttings in the usual way. Its clusters of small flowers open here in June, but add little to its beauty, which is confined to the foliage. (*Hort. Soc. Journ.)*

191. Lachenalia aurea. Nat. Ord. *Asphodeleæ.*—The Horticultural Society purchased this beautiful species of a collector, who discovered it in Natal. It first bloomed in the greenhouse at Chiswick last spring. It is remarkable for the length of time it remains in flower, a much longer period than any other of this much-neglected genus; although the Lachenalia is of as easy a culture as the Hyacinth and other spring bulbs, we very seldom meet with them in the greenhouse. The numerous broad flaccid leaves, which are a lively green, slightly mottled with purple, fall back upon the ground, and the scapes, which are of the same mottled colours, rise erect to the height of near two feet, profusely laden with its brilliant golden yellow tubular flowers. The individual blooms are much larger than

those of *L. tricolor* (the most common species), and are of a firm waxy substance. This species deserves to be in every greenhouse. (*Gard. Chron.* 176.)

192. SONERALIA ORBICULATA. Nat Ord. *Melastomaceæ.*—Dr. Royle forwarded this species to the Horticultural Society's Gardens, in 1852, from the Neilgherry Hills, India. It forms a neat little bush, of about a foot in height, blooming in the stove in the winter months very freely. The flowers are borne in a slender peduncle, about three inches long, and of a bright rose colour. It is a handsome stove perennial, requiring similar treatment to the Achimenes tribe. (*Hort. Soc. Journ.*)

193. CALBOA GLOBOSA. Nat. Ord. *Convolvulaceæ.*—Raised from seeds received from Mr. Hartweg, in January, 1846, said to have been collected on the eastern declivity of Orizaba, in Mexico. A strong half-wooded climber; leaves dull green, on long stalks, extremely variable in form. The flowers grow in naked umbels, on a peduncle nine or ten inches long; the pedicels are from one inch and a half to four inches long. The corolla is two inches and a half long, deep rich red, with a curved cylindrical tube, and a campanulate erect limb, divided into five erect, rounded, wavy lobes. The stamens are longer than the corolla. A rambling perennial, growing in any good rich soil composed of loam and sandy peat. It is easily increased by cuttings of the young shoots, and requires to be kept rather dry in a cool part of the stove during the winter, but should be kept in a cool airy part of the greenhouse during the summer, where it will flower from August to October. Although undoubtedly a fine species, it is only fit for growing where there is plenty of room for its tops to spread. It will not flower in a pot, and must therefore be planted in the open ground. (*Hort. Soc. Journ.*)

194. PENTARAPHIA CUBENSIS. Nat. Ord. *Gesneriaceæ.*—A very neat and pretty little plant, forming a dwarf shrub, and requiring a temperature between the greenhouse and stove. It is a native of Cuba, where it was discovered by M. Linden. A plant was presented to the Horticultural Society in the spring of 1849. A shrub, with a compact habit, and dark green, convex, evergreen leaves, obovate, crenated near the point. The flowers grow singly in the axils of the leaves, on cinnamon-brown stalks an inch long. The corolla is about the same length, tubular, curved, and rich scarlet, with a projecting style. The calyx consists of five straight, narrow, sharp lobes, not unlike five brown needles, whence the generic name has arisen. It is easily increased by cuttings treated in the usual way, and grows freely in a mixture of loam, peat, and leaf-mould. It remains in bloom for a considerable time. (*Hort. Soc. Journ.*)

195. DODECATHEON INTEGRIFOLIUM. Nat. Ord. *Primulaceæ.*—Raised by the Horticultural Society, from seed sent by Mr. Hartweg from California. It is a dwarf and stemless plant, with few, narrow, spathulate leaves, and bearing a single nodding flower upon a slender scape. It is almost the same in colour as the old *D. Media*, purple,

with a yellow centre, and dark purple anthers. It appears, however, to flower more freely in its native habitat, producing as many as ten or twelve flowers on a scape. (*Hort. Soc. Journ.*)

196. **Gastronema sanguineum.** Nat. Ord. *Amaryllidaceæ.*—A very handsome greenhouse bulb, introduced by Messrs. Backhouse, of York, in 1845, from Caffraria. A hollow glaucous stem, four or five inches high, supports a single sessile flower of its own length, surrounded at the base by a pair of long narrow spathes. The tube is slender and greenish, and expands into a deep rose obconical throat, having six crimson lines running from the sinuses of the limb on the outside, and on the inside as many white bands, each with a crimson streak along the middle. The limb is very deep rose colour, with six equal-spreading, oblong, whole-coloured segments. The leaves are nearly as tall as the flower, dark green. (*Cot. Gard.*)

QUESTIONS, ANSWERS, AND REMARKS.

Cyclamen Atkinsii.—*One of the Inexperienced* wishes to know how this plant is to be grown? [A cool frame or greenhouse will suit it, a mixture of peat soil, sandy loam, and decomposed leaves is a good compost.—Ed.]

Hardy Aroideæ.—Favour an old subscriber by the names of a few select plants of this class, such as may be procured at no great expense being of course preferred.—*B. B.* [The following list may be useful to you, if you wish to cultivate these curious things. All the species here enumerated are procurable; but several are more likely to be had in South of Europe gardens than in our own:—Arum maculatum, italicum, variegatum, corsicum, Dracunculus, crinitum, Dracontium, triphyllum, zebrinum, virginicum, Arisarum, proboscideum, tenuifolium; Calla palustris, æthiopica; Pothos fœtida; Ambrosinia Bassi, reticulata, maculata; Rohdea japonica; Houttuynia cordifolia.—Ed.]

Saffron Crocus.—Can you or any of your correspondents tell me where to obtain and how to cultivate the real Saffron Crocus, still grown, I believe, in France, and within my memory in England, for the purpose of producing the saffron of commerce? An early answer in the *Cabinet* will much oblige its unfailing reader for more than twenty years.—*Commeliver.* [If our respected correspondent will forward name and address, we believe we can put him in the way of procuring the true Saffron Crocus.—Ed.]

Chamærops humilis.—How am I to succeed with this plant out of doors?—*Triticum.* [This plant, commonly known as the Dwarf Fan Palm, is the hardiest of the tribe, and may be seen out of doors at Kew and other establishments. It will succeed if planted on a lawn, but requires a little protection from frost. It grows well in rich mould, well drained, and occasionally watered. Dig a pit three feet deep, at the bottom place a layer of pebbles to the depth of six or eight inches, to ensure drainage, and fill up with a rich sandy loam; it will flourish under such circumstances if protected with a mat or rush screen in frosty weather.—Ed.]

Greenhouse Climbers.—Having just put up a small greenhouse with a south-west aspect, I shall feel obliged to you, Mr. Editor, or to any of your numerous correspondents for the names of a few select climbers, together with any remarks that may be thought serviceable in their treatment.—*A New Subscriber.* [Perhaps the following will answer your purpose: Bignonia cherere, orange-red; B. jasminoides, white and purple; Mandevillea suaveolens, white; Passiflora Colvilli, purple; Tacsonia pinnatistipula, rose colour. They will require large pots, and the three last named, after the plants have occupied their space, may be pruned in each winter, and keep them somewhat dry at that period. Good loam with an admixture of heath soil will suit them well, and good drainage is essential.—Ed.]

Destruction of Pansies by Mildew.—I have experienced considerable annoyance by losing several of my best kinds, from a kind of white mildew with which they have been affected, which spoils the bloom and ultimately kills the plant. I am inclined to think it is an epidemic disease, as several of my neighbours' plants have suffered from the same cause.—*Arno.* [Dusting the plants overhead, and the under side of the foliage too, with common sulphur is a perfect remedy. In old stiff soil and confined damp situations the plants are liable to be affected with mildew. Each new plantation should be put in a fresh, well-enriched, loamy soil (if yellowish, the better), on an open substratum. If a new plantation is made from the offsets of diseased plants, they should be well dusted with the sulphur, and planted in the manner above stated. If there should be appearance of an attack of mildew, the earliest attention to destroy it should be given, or it will rapidly spread.—ED.]

SMALL GREENHOUSE.—I am about to fix up a small greenhouse, which I purpose heating by means of a flue and coal fire; now I shall be glad if you or any of the subscribers to this work will inform me if I may fix the fire-place at the inside of the house, without its being detrimental to the growth and health of the plants. I wish to adopt this plan in order to gain as much heat as possible, at a small expense, as also to place the fire out of reach of children; for I must inform you I shall have to fix up my house in a large yard where children can enter at times.—*Alfred Adin, a Subscriber of two years.*

THORNS.—Should any of your readers desire to form a select collection of the most ornamental Cratægi I beg to hand the annexed list, which will be found to contain none but handsome kinds, having proved and grown the whole of them in my shrubbery; they are planted in the same order in which they stand in the list. 1, Cratægus heterophylla, fruit small, red, in great abundance; 2, C. Aronia, fruit yellow, very large size, late in autumn; 3, C. Douglassii, fruit black, rather large, a very early sort; 4, C. oxycanthus rosea superba, the handsomest of all when in bloom, flowers deep crimson, fruit small red; 5, C. coccinea, the large-fruited scarlet variety; 6, C. odoratissima, sweet-scented, very large, pale red fruit; 7, C. punctata flava, the large yellow fruited; 8, C. Leeana, the tansy-leaved thorn, fruit large, pale red; 9, C. macracantha, the very long-spined thorn, fruit extremely small, brilliant scarlet, in great profusion; 10, C. Oliveriana, fruit small, black, very profuse, but late; 11, C. prunifolia, the entire-leaved thorn, fruit bright red, very late; 12, C. oxycantha, new, scarlet, a handsome double kind, a variety of No. 4.—*A Country Rector.*

CYPRIPEDIUM CALCEOLUS.—This, which is stated to be a British plant, on good authority, I have never been able to meet with. If any reader of your widely diffused *Cabinet* will inform me of a locality where it may be met with I shall feel much indebted, as I fear, it has ere this become extinct as a native wild plant. Ray records it as growing in the woods of Lancashire, and in woods near Ingleborough, in Yorkshire; whilst Hudson, Curtis, and Withering name other localities of a similar character in the county of York. In Withering's time, however, Ray's Yorkshire locality was searched in vain for the Lady's Slipper, "a gardener of Ingleton," as we are told, "having eradicated every plant, for sale." This practice of entirely eradicating, from the few spots where they are found, the rare plants of the flora, for any purpose, and especially for mere gain, whether followed in Withering's day or in our own, deserves to be strongly reprobated.—*T. P., Sheffield.*

ON FORCING THE ROSE, ETC.—Perhaps you will allow an old correspondent to offer a few remarks on this subject, which, by the inquiries made from time to time, I think may not be unacceptable, more especially when I say that my plan has exceeded my own most sanguine anticipations. Towards the end of August I pot the Roses, prune them back to two or three eyes, then plunge them in rotten tan, using a common cucumber frame, with a strong lining of hot dung, and put on the lights directly, covering them with mats, and thus let them remain till the buds have all broken, which will be in about a fortnight, when I take off the mats gradually and let them have the benefit of the light, so as to bring them to their colour in a day or two. I afterwards put them in a plant-stove at the coolest end, where the temperature ranges from seventy-five degrees to eighty degrees, where they remain for about a week, when I remove them to a warmer part of the house, and keep them moderately moist at the roots, with an occasional watering overhead by means of the syringe. As to the time for placing them in the frame, this can only be regulated by the time they are desired to be in bloom, which gives six or seven weeks from the time of putting them in the frame. I have forced them so as to have them in bloom by Christmas, but in that case the flowers are not so fine as when they come in bloom in February and March; in fact, during the latter period I have had them in flower as perfect and fully equalling such as could be grown out of doors at an advanced season. Moss and Provence Roses force remarkably well, requiring but a little more syringing than the others; those which I generally force are the following good old sorts, which have always answered my purpose well:—Moss Crimson, Crimson Perpetual, Lee's Perpetual, Provence, Indica ochroleuca, Smith's Yellow Noisette, Rose du Roi, and others. Besides the above Roses, I force by the same means Persian Lilacs, Hydrangeas, and Rhododendrons. The Lilacs should be taken up as soon as the leaves are off, and repotted in rather large-sized pots, using sandy loam; place them in a convenient corner till January, and then begin to force. The same treatment suits the Hydrangea. The Rhododendrons should be taken up carefully with good balls, disturbing the roots as little as possible, and the best time for this is early in November. Bring them into the forcing-house immediately after Christmas; they must have free syringing and watering, when they will begin to push directly, and will have fine heads of bloom in due time.

Mignonette, from which bees are excluded, and the production of seed thereby prevented, blooms much more freely, for a much longer period, and with a more continuous odour, than when bees have access to it.—*C.*

Calochortus venustus and C. splendens.—These are Californian bulbs with very handsome flowers, not much cultivated, principally, I believe, because their management is considered difficult. I have grown them, however, in very sandy soil, covered with litter in frosty weather, instead of taking up the bulbs when bloom is over. They have flowered well with me in August and September, and have occasionally produced seed.—*F. G., Hampshire.*

Amaryllis vittata.—This showy plant I have this season flowered in great perfection, by shifting it as soon as it began to grow, in the month of January, from a thirty-two to a twelve sized pot, without disturbing the ball; and with soil composed of equal portions of perfectly rotten dung, leaf-mould, river-sand, and light loamy soil, mixed together. I watered sparingly till it began to grow, and afterwards plentifully. One of my plants produced two scapes nearly three feet high, each bearing five large flowers, which, when expanded, were ten inches in diameter.—*C. P. S.*

On raising Rhododendrons from Seed.—Rhododendrons are a splendid class of evergreens, the majority very hardy, and admirably adapted for planting in shady situations. The seed is very minute; it should be sown in February, and placed in a hotbed. The plants are up in April; they are then kept moist and warm, and shaded from bright sunlight; when two inches high, they are thinned, and again subjected to the same close warm treatment, allowing them to gradually dry off and harden, before winter. The same mode is adopted the following spring, and by this means, in two years, plants are obtained from eight to twelve inches high.

Watsonia fulgida.—This most beautiful ever-growing, bulbous-rooted plant thrives well in rich, light, sandy loam. It is very hardy and robust in its nature, and throws up spikes of the most beautiful bright orange-scarlet flowers from the month of May to the month of September. It is extremely showy, and well adapted to border culture. There are other varieties of this genus, all equally hardy and very beautiful in their particular styles of growth and the colours of their blossoms, but this species is the queen of the genus, and no flower garden should be without it.—*B. S., Jersey.*

Balcony Garden.—The plants which should be made choice of as most suitable for the decoration of balconies ought to be those that do not attain a very large growth, and are tolerably hardy, as, from the exposed situations of windows, etc., they will be very liable to sudden changes of temperature, draught, winds, etc. It is a very good plan, to prevent the sudden drying of the soil in which the plant is potted, to place the pot within one or two sizes larger, and fill up the space between with moss, which should always be kept moist; the plants will then preserve a healthy appearance and will flourish much better. Feeders or garden saucers may be used if preferred, but they are not recommended, as they obstruct the drainage, and render the water standing in them sour and unwholesome to the plants. If, however, saucers are thought necessary, a little gravel should be put in them, so as to allow the escape of the water from the hole at the bottom of the pots; for if the water becomes stagnant, it soon swells the soil so as to entirely close up the hole and prevent the escape of water, and the soil becoming saturated with it, soon destroys the roots and health of the plant. Neither should the pots be painted, as is the practice with some persons, in order to look clean; the paint fills up the pores of the pot, and consequently injures the roots and health of the plants. It is a very good method, when decorating balconies, to have wooden boxes, neatly made, with a little moulding round them, etc., and painted stone colour or green, in which the pots may be placed. When placing the plants in, first put a layer of about two inches of rather coarse gravel, on which place the pots, and then fill up between with moss until level with the rim of the pots; on which some nice patches of green moss may be placed, which will keep the soil from drying too much, and will have a pretty appearance. The advantage that this mode has over planting in boxes is that a succession of bloom may be kept up, without the encumbrance of numberless boxes, and the plants will be found to thrive better.—*Henry Dyer*, *London*.

TO EXPEL RATS.—Rub some tar about the holes and places where the rats resort. To this they have a great aversion, because it sticks to their fur, from which they are not able to remove it. This is a sure and cheap way of driving them away from buildings in which they are troublesome.

EARLY BOTANISTS.—Few people are aware of the vast and adventurous labours of those earlier botanists, who were truly pilgrims on earth, visiting the shrines of nature in every accessible region of the globe, and from thence collecting the knowledge which not only extended but cleared and beautified the field of their favourite science, for the enjoyment of posterity. We will endeavour to give a brief sketch of one or two, whose history, as foreigners, may be less known in this country. Joseph Pitton de Tournefort, a native of Provence, was born in 1656. He was destined for the church; but his father dying before the time arrived for his ordination, he devoted himself to botany, a passion in which he had secretly indulged from a child. His first visit was to the mountains of Dauphiné and Savoy; and, after two years' study at Montpellier, to Catalonia, the Pyrenees, and the Alps, taking Languedoc and Provence in his way. The next two years he passed in arranging and classing the plants he had collected. He was then appointed Botanical Professor in the Jardin des Plantes, at Paris. Between this period and 1791, he explored Spain (second time), Portugal, England, and Holland. He now set about preparing his discoveries for the press, and published his "Elements of Botany," in 1694, and his "History of Plants growing near Paris," in 1698. In 1700 he set out upon no less an expedition than exploring a large portion of Asia and Africa. We have no space to recount the dangers and difficulties he encountered, nor even to follow him, step by step, in his wanderings. Crete, the islands of the Archipelago, the shores of the Black Sea, Trebizond, Erzeroum, the banks of the Euphrates, the mountains of Armenia, Georgia, and Mount Ararat, were his route in Asia, outwards; and the plague raging in Egypt alone deterred him from taking an equal stretch into Africa as he returned. The expedition cost him two years; and, as the fruits of it, he brought home no less than 1356 species of plants. The remaining six years of his life were spent in preparing the account of his tour for publication, but an accidental death cut him off in robust and vigorous manhood, at the age of fifty-two. His great Asiatic work was therefore a posthumous one. Frederick Hasselquist, a native of Sweden, was born in 1722. In youth, in manhood, and even in the grave, his name was associated with poverty and its distresses; and though at the same time constitutionally consumptive, nothing could repress his ardour for botanical research. In 1749, with a slender purse and weak health, he sailed for Asia; visited the islands of Milo, Scio, and Smyrna, and thence proceeded to Anatolia, to explore its mountains and ravines. He next bent his footsteps to Alexandria, Rosetta, Cairo, the country about Gizeh, and Damietta. From Damietta he sailed for the Holy Land, which he industriously explored; and proceeded, by the ruins of Tyre, to examine the vast gardens of the city of Sidon. Cyprus was his next destination, and thence he returned to Smyrna, by Rhodes, carrying with him an incredible number of curiosities which he had collected in Egypt and the Levant. Three years of such toil and privation, however, were too much for such a constitution.

He died at Smyrna; and having borrowed £150 in the East, his collections and papers were seized for the debt. His friend Linnæus was then too poor to redeem them; but the Queen of Sweden generously supplied the funds, and Linnæus had shortly the satisfaction of editing the MSS. of one of the most worthy, laborious, and unfortunate children of science.—*Gardener and Practical Florist.*

LARGE ROSE TREES.—I have often heard amateurs, when admiring some of the large specimens in the nurseries here, express astonishment at their prodigious size, which they attribute to their great age and good soil. But it must be told, that the system of pruning has as much to do in this matter as the age of the trees, or the soil in which they grow. The oldest of the large trees here cannot number more than twelve years, though there are others much older not half the size. Often have I seen Rose trees full of shoots, nearly all proceeding from the base of the head, owing principally to close pruning. When the knife is applied, whether in autumn or in spring, the greater part must be removed, for there is not room enough for the whole to be developed. Now, it is not the production of a number of branches I consider injurious; if the tree is in a healthy and vigorous condition this is natural and advantageous. But why should they not be obtained in such positions that they may be of permanent benefit to the plant—be made to extend its size, and render less thinning necessary? This may be done. Two years ago, after having pruned a number of large specimens in which I had observed this error, I watched for the bursting of the buds, with the view of practising disbudding. When they had shot forth about half an inch, I took a knife with a sharp point, and commenced my search at the heart of the tree. From here I rubbed off, close to the bark, a great number of buds, leaving only such as, from their position, promised to increase the size or improve the contour of the head. If a bud was pushing where there was a gap, such was left; the others were thinned, leaving those which took a lateral and outward course of growth. Proceeding upwards, I cleared the centre of the tree pretty freely, leaving only just so many buds as seemed necessary to preserve it from becoming straggling. Towards the top and circumference also, the buds, where crowded or likely to cross each other, were removed. A month after the first looking-over, fresh buds had broken, and thus was opened a prospect of more gaps being filled, the outlines of the heads being still improved, and their size extended. They were looked over again and again, and the same plan followed out. The growth was in consequence more vigorous than that of the previous year, and the flowers fine. On the fall of the leaf in autumn, the succeeding course of action was apparent. The trees were pruned as usual, and there was little mind exercised in the operation; little thinning required—no necessity to look at the tree for some minutes before one could determine where to begin; which, in my early attempts, I must confess, I have often done, owing to the interminable interlacings of the shoots. The second and third year the same plan was followed, and the trees are now of handsome form, large and healthy, producing an abundance of good flowers. It should be stated that the first year they were taken in hand they were watered once a week for two months with liquid manure. The sole reason for this was that the soil in which they grew had become impoverished. We apply the plan of disbudding to Pillar and Weeping Roses; as to others, by rubbing out any buds that may appear disadvantageously situated. In the youngest stage of the tree, the buds left to produce flowers and flowering shoots for the subsequent year should stand about about six inches apart on the main branches; intermediate buds should be rubbed out. The laterals produced in after stages may also be disbudded; but masses of flower being the object sought here, the practice should not be too freely resorted to. A few words on summer pruning or thinning seem called for. If disbudding can be carried out there is no need of summer thinning, but if it cannot be, then the latter practice may be followed to advantage. So soon as the plants have done flowering look them carefully over, thin out the weak unhealthy shoots, and even some of the stout and healthy ones, where they approach each other too nearly; each shoot should stand free and exposed on every side. It is surprising to see how stout and firm the shoots become, and how the leaves increase in size after summer thinning. The summer kinds submitted to this treatment usually continue their growth by the elongation of the main shoots, the buds on the axils of the leaves remaining dormant; but with the autumnals, the buds push forth the entire length of the shoots, and the second flowering is complete. The trees are improved in both cases, for the shoots grown at this period will produce the finest flowers in the subsequent season.—*Paul's Rose Garden.*

SARRACENIAS.—The stove is decidedly the most suitable place for these species making and maturing their growth, at which time they require much warmth and moisture. A temperature of from eighty degrees to one hundred degrees, with plenty of water at the roots, and syringing three times a day, from March till September, has been found to suit them best. During their season of rest, a greenhouse would probably answer the ends of cultivation better than the stove; at all events, the plants should be kept in a dry cool atmosphere, from forty degrees to sixty degrees, not higher. The best time for potting is January, and the best material for that purpose is silver sand and sphagnum, well mixed with a portion of peat and potsherds, broken quite small. It is important to have plenty of drainage, and no fear need be entertained of excess in this particular. It has been customary to place the pots in saucers which have been kept full of water during the whole of the summer season. I do not, however, attach any importance to this practice. The plants will thrive equally well without saucers. Pitchers are usually formed in October, and continue perfect for three months. The number of pitchers on an individual plant of *S. Drummondi* varies from fourteen to twenty-three. I have measured individual pitchers of this species, and find the maximum length two feet six inches, and the maximum girth at the top six inches. Flowers usually open in March and April. By removing the flower-buds as they appear, the succeeding pitchers become much finer.—*W. Tate.*

CULTURE OF GRAMMANTHES CHLORÆFLORA.—This is properly a greenhouse annual, and, as a pot plant, makes an admirable companion for the *Mesembryanthemum pyropæum*, with which it might also be associated in the open air, on dry sunny rockwork, during summer. Like that species, however, the flowers require sunshine to cause them to develope their beauty, but exposed to the sun, a tuft of the plants, when in a flowering condition, forms a mass of yellowish copper-coloured stars of remarkable brilliancy. I can hardly imagine a more beautiful little thing for a sunny window. The seeds should be sown early in March, along with those of other half-hardy annuals, in pots, placed either in a greenhouse or in a window, or in a frame with a very mild bottom heat, or in a pit, or, in fact, in any place where they will be subjected to a temperate climate. After germination, and when they have formed a pair or two of small leaves, they should be pricked out in three-inch or five-inch pots, as may be convenient, the plants being placed about an inch apart. They should then be placed in a rather close frame, either with or without very slight warmth—the difference being that in one case they will grow faster than in the other; when they are well established, they may be removed to the greenhouse stages, or planted out as already suggested. If grown in a window, they must be shaded and kept covered by a glass, or some other contrivance until established. A light sandy soil seems to suit them well; I have used a mixture of leaf-mould with small proportions of loam and sand, and find them grow freely; though it is probable that if the young plants had been stopped before they came into flower, they would have had individually a more bushy habit. Sown in March, they come into flower by the end of May, and continue a couple of months in bloom. Seeds sown about June will produce plants to bloom throughout the autumn. Being small, and bearing a persistent somewhat deceptive leaf-like calyx, it will be necessary, in order to its perpetuation, to examine the plants closely, so as to gather, as they reach maturity, such of the follicular capsules as produce perfect seeds.—*W. Green, Exmouth.*

THE PALMYRA PALM.—We have lying before us a small work, of 92 pages, entitled "Description of the Palmyra Palm," by W. Ferguson, Esq., printed in Ceylon, and illustrated by several woodcuts, the drawing and engraving of which have been executed by native artists. It is remarkable as the first illustrated work published in Ceylon, and is indeed very creditable to those who have produced it. The author gives a most interesting account of the Palm, and its uses and products, correcting many popular errors, and embodying a great mass of valuable miscellaneous information, collected from original sources during a ten years' residence in the island. We venture to call it the best account of the Palmyra which has been published. It is, we understand, Mr. Ferguson's intention, on his return to Ceylon, to publish similar descriptions of the other familiar plants of that island; and we hope he may meet with sufficient encouragement to induce him to do so. We have little space for extract, but must quote the following brief notice of a many-headed Palmyra:—"The Dragon tree of Teneriffe divides into several branches, and the Doum Palm of Upper Egypt (*Hyphæne coriacea*) is dichotomous, or divided into regular pairs of branches, but the departure of our Indian species from their normal state is very rare indeed; however, the phenomenon of a several-headed Palmyra is sometimes met with. The first one the writer saw was some years ago, on Mr. Hardy's estate at Jaffna. It was a male tree, having then four heads upon it, with marks where three or four others had been. These divisions began about twenty-five or thirty feet from the ground. Other specimens are found in the peninsula, on the island of Delft, and on the smaller islands near Jaffna, and the writer saw one near Oodoville with six heads on it. One of these grew nearly in a line with the body of the tree, while the other five grew out from the side of this one, all from the same centre, but bending somewhat outwards before they could attain their upright position. There are marks where three others had been. The tree mentioned by Mr. Forbes, in his "Oriental Memoirs," as having forty heads was probably a Palmyra."

MYRTUS TOMENTOSUS.—Although this is an old plant, it is a rare occurrence to see it properly cultivated, and producing its very pretty rose-coloured flowers in such profusion as it will do under proper management. It is a very handsome stove shrub, flowering early in the season, and continuing for some time in perfection. It is readily propagated by cuttings of the young wood, under a bell-glass on a gentle bottom heat, and it strikes the best when the young wood is about half ripe; make choice of the short stubby pieces, and take them off with a heel, that is, with a portion of the parent branch adhering to the base of the cutting. When they are rooted, which will generally be in about six weeks or two months, pot off singly, and nurse in a warm frame until thoroughly established. Afterwards harden the plants off, and grow them in the stove. Of course, if good plants are desired, the young ones must be stopped to make them bushy, and they must be grown very vigorously. A mixture of loam, leaf-mould, and peat, with plenty of sand, will be found very suitable to pot them in. Water liberally, and occasionally in the growing season with liquid manure, but recollect the blooming of this, as well as of all other hard-wooded plants, depends upon the wood being properly matured in the autumn; therefore attend to it in time.—*A. B. C.*

SALVIA SPLENDENS FOR WINTER BLOOMING.—As soon as there is the least appearance of bloom in August, I take off cuttings from the strongest shoots, just below the third joint, insert them singly in small sixty-sized pots, and plunge them in a brisk bottom heat under a handglass, in a compost of leaf-mould, sand, and dung in equal proportions, taking particular care that they do not droop. When well rooted, shift them into the next-sized pot, and continue to shift them until finally established in forty-eight-sized pots. This fine plant is a great acquisition to the conservatory, especially in the dull months of November, December, and January.—*W. Taylor, Camberwell.*

TO DESTROY MICE.—Fry a sheet of brown paper in any grease, the coarser the paper is the better. This the mice will eat, and it will destroy them. This is safer, cheaper, and easier than any trap.—*Senex.*

THE BIRCH TREE.—The utility of the bark of this tree in North America is very remarkable. Not only are the canoes in which the Indians trust themselves, on lakes exceedingly boisterous, some miles from the shore, made of it, but also all sorts of small cups and dishes. Besides, it burns like pitch, splits into threads, which serve for twine, and the filmy parts, near the outside may be written upon with pencil, being no bad substitute for paper.—*Head's Forest Scenes.*

INDEX.

ILLUSTRATIONS.

PAGE
Amphicome Emodi 129
Camellia Japonica, *var.* Jenny Lind 217
Clematis patens, *var.* Amalia 265
———————— Louisa 265
Corræa, *var.* Brilliant 329
———— rosea-alba 329
———— viridiflora-alba 329
Cuphea eminens......................... 57
Delphinium cardinale 81

PAGE
Exacum Zeylanicum.................. 177
Gonocalyx pulcher 57
Lapageria, *var.* albiflora 83
Phlox, *var.* Doctor Leroy 241
———— Madame Fontaine ... 241
Rose, Prince Albert 305
Smilax Mauritanica 1
Spiræa Reevesiana, *var.* flore pleno 154

ORIGINAL.

PAGE
Acacia, on grafting 299
Acacias, propagation and management of 255
Achimenes, culture of 10
Africa, South, flora of 209
Agapanthus umbellatus, on blooming 29
Agave Americana, remarks on...... 50
Alpines, remarks on and list of ... 274
Amaryllis, query on blooming...... 26
———— tribe, culture of 169
———— vittata, remarks on. 363
Andes, Peruvian, vegetation of ... 214
Anemone Japonica, propagation of 289
———— Pavonia, remarks on ... 327
Anemones, culture of 11, 40, 256
Annuals, showy hardy............... 313
Anomotheca cruenta, on 301
Antirrhinum, on the.................. 226
Ants, on banishing 54
—— to destroy........................ 304
Ardisia, remarks on the 325
Aroideæ, hardy, query and answer on 361
Aster seed, French and German, home saved 56
August, notes on the botany of ... 222
Azaleas, Indian, on growing......3, 122
Balsam, on growing the 249
Begonias, culture of 69
Birch-tree, on the..................... 367
Bone-dust for compost, query on.. 26
Boronias, remarks on 214
Botanical names, rules for pronunciation 202
Botanists, early remarks on......... 364
Brugmansias, culture of 127
Bug, mealy, on destroying the...... 79
Bulbs, garden 334
—— remarks on 122
Bunya-Bunya, on the 303
Cactus, culture of the 26

PAGE
Calceolarias, on seedling 151
———— on the propagation and culture of 265
———— herbaceous, treatment of 159, 334
———— shrubby, list of best... 300
Calla Æthiopica, culture of 138
Calochortus venustus and C. splendens, on................................ 363
Camellias in windows, on growing. 123
———— on blooming in succession 62
———— on walls 174
———— remarks on 55
Campanula pyramidalis, culture of 88, 123
Cantua dependens, treatment of ... 27
Carnation, Tree, on the............1, 193
———— list of 3
Carnations, on raising from seed... 124
———— and Picotees, on 54
———————— on new ... 118
Caterpillars, to destroy............... 213
Cereus speciosissimus, management of 346
Chamærops humilis, query and answer on 361
Charcoal for growing Pelargoniums 31
Chlidanthus fragrans, on 298
Chorizemas, treatment of...40, 238, 278
Chrysanthemum, culture of the ... 89
———— on preparing for exhibition 332
———— and Verbenas, new 209
Cinerarias, new and superb......... 56
Clay, burnt, for striking cuttings... 29
Clematis Sieboldii, query on 237
Climbers, greenhouse, query and answer on 361
Clintonia pulchella, remarks on ... 213
Cockscomb, culture of the 184
Combretum purpureum, query on 122
Composts, remarks on......... 124, 127

PAGE
Conservatory, on the 341
Conservatories, on fumigating...... 210
Corræas, observations on 5, 329
Cotoneaster microphylla, for hedges 301
Crinums, remarks on 325
Crocus, Saffron, query on........... 361
Crocuses, list of........................ 211
——— on forcing.................. 92
Cuttings, on striking 27
Cyclamen Atkinsii, query and answer on 361
Cydonia Japonica, remarks on..... 174
Cypripedium Calceolus, remarks on 362
Dahlias, remarks on 80
——— twelve best new 127
Daphne odora, culture of........... 80
Datura ceratocaulon, on 263
Daturas, culture of 344
Delphiniums, remarks on............ 81
Deodar Cedar, on the 128
Deutzia gracilis, remarks on 215
Dielytra spectabilis, on............... 174
Dioscorea batatas, remarks on...... 238
Dipladenia crassinoda, treatment of 282
Dodecatheon media, remarks on... 349
Erythrina Crista-Galli and laurifolia, on the propagation of...... 218
Estate, design for a small 194, 287, 348
Euphorbia splendens, on the 29
Evergreens, query on 122
Ferns, British, remarks on 54
——— treatment of 66
——— query on 150
"Ferny Combes," remarks on...... 326
Florists' flowers, composts for ... 237
——— what are 316
Flower-gardens, Chinese 343
——— designs for, 74, 104, 136, 225, 248, 288
Flowers, double, the cause of 92
——— in the metropolis, on the taste for.............................. 351
——— notes on 28
——— on drying specimens of ... 149
——— on the beauty of 212
——— on the colours of............ 216
——— on the culture of............ 24
——— on the impregnation of ... 150
——— remarks of ancient writers on 134
Fuchsia, as a plant for hedges...... 168
——— list of distinct............... 79
Garden, balcony, on a 363
Gardeners, juvenile, instructions for 114
Gardening, on the present taste and style of 129
——— Chinese...................... 240
——— landscape 158
Gas, on the consumption of......... 152
Gentianella, remarks on 55
Glass, on violet-coloured 212

PAGE
Grammanthes chloræflora, culture of 366
Grass-seeds, on sowing............ . 355
———tree, Australian, query on... 297
Greenhouse, small, query on 362
Greenhouses, plans for, query on... 299
Heartsease (see Pansy).
——— treatment of............ 139
Heaths, Cape, remarks on 218
——— treatment of......... 185
——— hardy, remarks on 273
Helichrysum, on changing the colour of the flowers of 26
Hepatica, descriptive remarks on .. 164
Hermodactylus, treatment of the genus 277
Hibiscus Manihot, on 54
Horticultural Society, meeting of... 120
Hothouses, on the temperature of 84
Hoya carnosa, remarks on 126
——— treatment of......... 152
Humea elegans, on..................... 211
Hyacinths, culture in moss 46
——— list of best.................. 300
——— list of new.................. 210
——— on flowering for exhibition 337
——— on forcing.................. 303
——— treatment and Dutch culture 280
Hyacinthus plumosus, and Ixias, query on............................. 122
Hybridizing and cross-breeding, on 165
Iridaceæ, Cape, treatment of 250
Ita Palm, on the 300
Ixias, culture of........................ 216
——— descriptive remarks on... ... 264
——— remarks on 53
January, floral operations for 31
July, notes on the botany of 177
Kew, notes from 206
Lapageria rosea, *var.* albiflora, remarks on 33
Lawns, on making new......... 240, 355
Leaves, microscopic appearance of 238
——— propagation by 299
——— to take impressions of ... 128
——— variegated, remarks on ... 262
Leonotis Leonurus, treatment of... 346
Leschenaultia formosa, on 212
——— culture of............ 105
Life, tenacity of........................ 213
Light, coloured, effect of............ 302
Ligusticum meum, on 327
Lilac, on the value of the............ 4
Lilacs, on standard 212
Lilium giganteum, on 298
——— lancifolium, culture of ... 272
Lily, Belladonna, on the 79
——— Jacobæa, treatment of......... 78
——— of the Valley, remarks on ... 124
Lisianthus Russellianus, culture of 329

PAGE
Lobelias, culture and list of......... 99
Luculia gratissima, on 30, 125
Magnolia, query on 31
Mandevillea suaveolens, on 237
Mangrove swamp, on a................ 173
Manure, liquid, value of 320
Manures and soils, remarks on ... 257
Medinilla magnifica, query on...... 325
Mesembryanthemums, culture of 85, 328
Mice, to destroy 173, 367
Mignonette in boxes, culture of ... 188
——————— remarks on 363
Mildew, remarks on 81
Mimosa prostrata, on 55
Mitraria coccinea, remarks on ... 213
Moss on grass-plots, to destroy ... 125
Myrtle, on the 328
Myrtus tomentosus, culture of ... 367
Natural, on the term, in landscape gardening 12
Oak, an ancient........................ 304
October, notes on the botany of ... 285
Orange, Osage, on the 78
Orchids, variegated, on 354
Orobanche, remarks on the......... 326
Ouvirandra fenestralis, remarks on 75
Oxalis Boweana, on 128
——— floribunda, culture of 239
Palm, Palmyra, on the............... 366
Pansy (see Heartsease)
Pansies, list of the best 176
——— pot culture of 257
——— query and answer on 251, 361
Passiflora edulis, culture of......... 42
Passifloras, remarks on............... 325
————— greenhouse, query on ... 261
————— stove and greenhouse, on 315
Pelargonium, on the first............ 212
——————— preservation and treatment of 47
——————— show, culture of ...59, 137
Pentas carnea, remarks on 305
Petunias, remarks on 150
Phloxes, list of best 241
Pinks, list of best..................... 176
——— notes on new and superb... 126
——— on growing in pots 350
——— propagation of, by slips ... 61
——— remarks on 312
Plants, failure in bloom of 65
——— for an entrance-hall, query on 261
——— for a room, query on 150
——— geographical distribution of 251
——— greenhouse, on growing in frames 283
———————————— management of 310
———————————— query on...123, 150
———————————— climbing, on ... 38
——— hardy border, on 326
——— hints on neglected 321
——— instructions for preserving 15

PAGE
Plants, in windows and balconies.. 189
——— mildew on 80
——— New Holland, treatment of 318
——— on striking cuttings of, 71, 82, 320
——— on supporting 329
——— on the exposure of 141
——— on the growth of 30
——— on varieties and hybrids... 18
——— on watering 214
——— propagation of, by cuttings and layers 320
——— stove aquatic, query on ... 122
——— tender, to protect............ 215
——— vital principle in 174
——— water, query on 150
——— window, remarks on ...227, 298
Pœonies, list of best.................. 328
Polyanthus, treatment of............ 267
Poppies, Carnation, a bed of 137
Portulaccas in the open border ... 59
Primrose, Chinese, remarks on, 28, 304
Pyrola rotundifolia, remarks on ... 262
Ranunculus, culture of the, 7, 105, 242
—————— list of best show 261
—————— on raising from seed... 101
—————— etc., on planting out... 103
Rats, to expel 364
—— or mice, to destroy 128
Reminiscences floricultural......... 243
Review, "Dictionary of Botanical Ferns" 231
————— "Ferny Combes"......... 293
————— "Rustic Adornments for Homes of Taste"............ 145, 229
Rhodanthe Manglesii, etc., on ... 152
Rhododendron and Rose, on budding and grafting 94
Rhododendrons, on raising from seed 363
———————— remarks on 237
Richardia Africana, on 195
Rockery, on a 54
Rockwork, on forming and planting 161
————— and rock-plants, on 97
Rondeletia, on growing the......... 330
Rootwork, remarks on............... 325
Rosa Devoniensis, remarks on ... 62
Rose, double yellow, on the......... 28
—— on forcing the 362
Roses, a few words on 308
——— trees, on large 365
——— climbing, in pots 76
——— on budding 263
——— on cutting the head of...... 53
——— on protecting tender... 28, 127
——— on pruning 54
Salvia gesneriflora, on 216
——— splendens, remarks on...... 367
Sarracenias, culture of............... 366
Savine, remarks on 299
Scillas, vernal, remarks on 301

PAGE
Seeds, on sowing 125
—— grass, for a lawn 123
September, notes on the botany of 245
Shrubberies, on designing and planting 43
Shrubs for planting in beds 270
—— and trees, list of flowering, query on 122
Soap-berry, remarks on 174
Sparaxises, remarks on 53
Sparmannia Africana, treatment of 306
Spider, red, on destroying, 41, 128, 322
Spiræas, a list of 153
Stephanotus floribundus, culture of 192
Stock seed, remarks on 240
Stocks, management of 58
—— summer, remarks on 327
—— ten-weeks, remarks on 214
Stoves, etc., temperature of 214
Taban, on the 55
Tamarisk, remarks on 108
Thorns, list of 362
Tritoma, genus, remarks on the ... 221

PAGE
Tropæolum tricolorum, propagation of 327
—— remarks on 262
Tulips, early, list of best 302
—— query on 122
Verbena seed, remarks on 30
Verbenas, new show 209
—— on wintering 263
Victoria Regia, remarks on ...299, 304
Villa residence, design for the grounds of a 348
Violet Neapolitan, culture of 91
—— sweet-scented, culture of... 276
Walks, on the formation of 335
Wallflower, on the 155
Ward's case, plants for 173
Watsonia fulgidæ, remarks on 363
Wellingtonia gigantea, on 304
Wire-worm, on the 29
Wistaria sinensis, remarks on 174
Woodlice, on destroying 58, 121
Worms, on destroying 298
Yuccas, management of 191

NEW AND SELECT PLANTS NOTICED.

Abronia umbellata 147
Æschynanthus fulgens 49
Agave Americana 50
—— Celsii 260
—— striata 357
Amaranthus albus 297
Amaryllis solandræfolia 114
Amphicome Emodi 21, 129
Aphelandra variegata 72
Aralia Japonica 204
—— papyrifera 72
Arctotis acaulis, *var.* speciosa 170
Ardisia crispa 204
—— Sieboldii 148
Argyreia hirsuta 323
Aristolochia Thwaitesii 203
Azalea alba-lutescens 23
—— criterion 23
—— Duke of Wellington 23
—— exquisite 23
—— Gledstanesii formosa 23
—— Juliana 23
—— Louis Napoleon 170
—— narcissiflora 23
—— Stanleyana 23
—— the Bride 170
Banksia Victoria 111
Begonia cinnabarina hybrida 149
—— magnifica 52
—— picta 149
—— zanthina argentea 148, 204
Biota Meldensis 297
Calathæa metallica 72
—— pardina 71
Calboa globosa 360
Calceolaria ericoides 357
Caltha introloba 51
Camellia, Jenny Lind 149
Canarina campanula 148
Canna liliiflora 22
Capsella antipoda 51
Cattleya bicolor 146
—— maxima 112
—— Skinneri, *var.* parviflora 173
Cinchona nobilis 72
Clavija ornata 204
Clematis glandulosa 206
—— patens, *var.* Amalia 22
—— —— Helena 206
—— —— Louisa 22
Clintonia pulchella, varieties 148
Clivia Gardeni 49
Codonopsis rotundifolia 323
Cælogyne speciosa 21
Coffea Benghalensis 173
Collinsia verna 236
Comesperma polygaloides 51
Dirisæa Blassii 359
Cordia superba 21
Dodeiatheon integrifolium 360
Corræa cardinalis 146
Cuphea eminens 57, 111
Cupressus MacNabiana 205
Cymbidium chloranthum 146
Cypripedium purpuratum 111
Dahlia, Crystal Palace scarlet 205
Delphinium Belle Alliance 170
—— cardinale 22, 81
—— delicatum 170
—— Mrs. Gerard Leigh 170
Dendrobium Amboinense 296
—— bigibbum 111
—— Falconeri 323
—— lituliflorum 206

PAGE
Dendrobium, MacCarthiæ 22
Dianthus albo-nigricans 149
Didymopanax splendidum 51
Dircæa Blassii 359
Drosera angustifolia 51
Dodecatheon integrifolium 360
Encephalarotus Caffer 112
Escallonia densa 72
Exacum macranthum 113
——— Zeylanicum 177
Fuchsia, Charlemagne 172
——— Countess of Burlington.. 172
——— Donna Joaquina 172
——— Emperor Napoleon 171
——— Malakoff 206
——— pendulina 206
——— Venus de Medici 171
——— Volcano di Aqua 172
Galeottia fimbriata 357
Galipea macrophylla.................. 356
Gastronema sanguineum 361
Gloxinia erecta alba-auriculata ... 24
——— coronata 24
——— flammea 24
——— Queen Victoria ... 24
Gonocalyx pulcher 57, 110
Heterotropa asaroides 260
Hibiscus rosea sinensis albo-pleno.. 28
——— aurantia-pleno 28
Howittia trilocularis.................. 51
Hypericum oblongifolium 324
Iris susiana 147
Isoloma Trianæi 28
Jacquemontia cælestis 324
Juniperus pyriformis 206
Lachenalia aurea 359
Lælia acuminata 112
——— purpurata 358
Lapageria rosea, *var.* albiflora ... 28, 33
Locheria magnifica 58
Lonicera Browni 324
——— splendida 324
Lysimachia linearifolia............... 260
——— micans 323
Marianthus bignoniaceus............ 51
Masdevallia Wagneriana 204
Meriania macrantha 72
Methonica virescens................. 297
Meyenia erecta 148
Moricandia Ramburii 356
Mucuna prurita........................ 324
Myosurus Australis 51
Nicotiana glutinosa 260
Nyctanthes Arbor-tristis 73
Nymphæa blanda 147
Odontoglossum hastilabium, *var.* fuscatum 203
——— membranaceum ... 204
Orobus Fischeri 323
Ortisophon spicatus.................. 71
Ouvirandra fenestralis 75
Pachyphytum bracteosum 357
Pelargonium Endlicherianum 356

PAGE
Pentapterygium flavum 147
Pentarphia Cubensis 360
Pernettya furens 203
Petunia, Favourite 171
——— Imperial 24
Pharbitis hispida 114
Pholidota suaveolens................. 206
Phytelephas macrocarpa 172
Pinckneya ionantha 72
Pinus Gordoniana 358
——— Grenvilleæ 358
Polygala veronicea 51
Potentilla coccinea flore-pleno...... 149
——— grandiflora maculata ... 149
——— lutea flore-pleno 149
Psammisia sclerophylla.............. 52
Pteris heterophylla 236
Ranunculus anemoneus 50
——— Millani 50
Rhododendron Blandfordiæflorum 259
——— Brookeanum 295
——— camelliæflorum 295
——— campanulatum, *var.* Wallichii 236
——— Falconeri 237
——— Hookerii 236
——— *var.* Alarm 296
——— Beauty of Surrey 296
——— Black-eyed Susan 296
——— Etoile de Villiers 114
——— John Waterer ... 296
——— Lady Eleanor Cathcart............................... 296
——— Lord John Russell 296
——— Maguum Bonum.. 296
——— Mrs. John Waterer 296
——— Moulmainense ... 112
——— Perieanum 296
——— Prince Albert ... 296
——— Prince Camille de Rohan 52
——— Princess Royal ... 205
——— William Downing 296
Ribes subvestitum............... 206, 259
Rondeletia anomala 205
Rose à fleurs vertes 324
——— Auguste Oger 324
Salvia porphyrantha..... ...... 113, 297
Sarracenia Drummondii 51
——— purpurea 52
——— rubra 52
Saxifraga ciliata 172
Sisymbrium trisectum 51
Soneralia orbiculata 360
Spiræa Reevesiana flore-pleno, 147, 153
Swammerdamia antennaria 359
Tecoma fulva.......................... 73
Tropæolum Lobbii tricolor 170
Tydæa amabilis........................ 51
Verbena, Favourite 171
Watsonia iridifolia 113
Weigelia amabilis 49
Whitlavia grandiflora ... .13